Government of the People's Republic of Bangladesh

National Agricultural Technology Project (NATP)

Project Preparatory Team (PPT)

Final Report

ON

Social Assessment

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Abbreviations and Glossaries

Acre	Unit to measure land, 2.47 acre= 1ha
ADB	Asian Development Bank
Agr.	Agriculture
AI	Artificial Insemination
Aman	Crop grown during August-December
ARI	Agriculture Research Institute
ATI	Agriculture Training Institute
Aus	Crop grown during April-July
BARC	Bangladesh Agricultural Research Council
BARD	Bangladesh Academy for Rural Development
BARI	Bangladesh Agricultural Research Institute
Baor	Large water bodies, usually abandoned river channels
BAU	Bangladesh Agricultural University
BBS	Bangladesh Bureau of Statistics
Beel	Low-lying flood plain area but not as big as haor
Bigha	Local unit to measure land area, 3 bigha= 1 acre
BLRI	Bangladesh Livestock Research Institute
Borga	Sharecropping arrangement between landowner and farmer
Boro	Crop grown during February-April
BRAC	Bangladesh Rural Advancement Committee, a National NGO
BRDB	Bangladesh Rural Development Board
BRRI	Bangladesh Rice Research Institute
BS	Block Supervisor
BWDB	Bangladesh Water Development Board
CBO	Community Based Organization
CERDI	Central Extension Resources Development Institute
CGP	Competitive Grant Program
Chasi	Peasant
CIG	Common Interest Group
DAE	Department of Agriculture Extension
DLS	Department of Livestock Services
DOF	Department of Fisheries
ERP	Extension and Research Project
FAO	Food and Agriculture Organization
FEF	Field Extension Facility
FFP	Fourth Fisheries Project
FFW	Food for Works
FRI	Fisheries Research Institute
GDI	Gender Development Index
GDP	Gross Domestic Product
Ghani	Animal-driven mustard crusher
GOB	Government of Bangladesh
Grihasth	Peasant
GMO	Genetically Modified Organism
GUP	Gono Unnayan Prochesta, Local NGO
Haor	Low-lying flood plain area remaining under flood water during May-November
HDI	Human Development Index
HORTEX	Horticulture Foundation (A Public foundation promoting horticulture export)
HYV	High Yielding Variety

IDA	International Development Agency
IDB	Islamic Development Bank
IPM	Integrated Pest Management
ITDG	Intermediate Technology Development Group
KGF	Krishi Gobeshona Foundation
LEAF	Local Extension Agent in Fisheries
LGB	Local Government
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MFI	Micro-finance institution, usually NGOs
MOA	Ministry of Agriculture
MOC	Ministry of Commerce
MOEF	Ministry of Environment and Forest
MOFL	Ministry of Fisheries and Livestock
NAEP	National Agriculture Extension Policy
NAP	National Agriculture Policy
NARS	National Agricultural Research System
NATP	National Agriculture Technology Project
NATPI	National Agriculture Technology Project, India
NGO	Non-Government Organization
NW	Northwest region of Bangladesh
PKSF	Palli Korma Sohayak Foundation, a public funded foundation helping small local NGOs in operating micro-credit for rural employment generation in Bangladesh
PRSP	Poverty Reduction Strategy Paper
RDA	Rural Development Academy
R&D	Research and Development
SAIP	Smallholder Agriculture Improvement Project
SAAO	Sub Assistant Agriculture Officer
SM farmer	Small and Marginal Farmer
SPGR	Sponsored Public Goods Research
T. Aman	Transplant Aman
Tk.	Taka – local currency of Bangladesh, 1 US $= 68 Taka
TOR	Terms of reference
UECC	Upazila Extension Coordination Committee
UEFT	Union Extension Facilitation Team
UFO	Upazila Fishery Officer
UNDP	United Nations Development Program
UP	Union Parishad (Elected local government in rural Bangladesh)
Upazila	Sub-district: Local administrative unit in Rural Bangladesh
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding

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EXECUTIVE SUMMARY

1. Introduction

The principal goal of Bangladesh's economic policy is to reduce poverty. Although considerable progress has been achieved in the fight against poverty, Bangladesh has still long way to go if the millennium development goal (MDG) of reducing poverty has to be achieved fully by 2015. This requires annual economic growth rate of 6 to 7 percent on a sustained basis and the bulk of the growth must come from the agriculture sector.

Within the broader framework of poverty reduction strategy, the National Agricultural Technology Project (NATP) proposed to be undertaken by the Government of Bangladesh (GOB) with assistance from the World Bank aims at the following **development objectives:**

a. Strengthen the national agricultural technology system,
b. Increase productivity,
c. Accelerate and diversify production systems, and
d. Enhance market opportunities and market linkages, especially of small and marginal producers of high value commodities.

The proposed NATP comprises the following three main components:

a. Agricultural Research Support
b. Agricultural Extension Support
c. Development of Value Chain, supporting high-value crops and value-addition.

As part of the formulation of the proposed National Agricultural Technology Project (NATP), a group of 23 national consultants were engaged to prepare a detailed report called "Project Description and Implementation Plan". The group of consultants included a Social Scientist to make a Social Assessment of the proposed project interventions. The NATP has already produced a consolidated report incorporating the brief reports of all members. This one is the component report on the social assessment part of the NATP project preparation team.

2. Beneficiary Assessment

2.1 Socio-Economic Profile of Bangladesh

Bangladesh, the world's most densely populated agricultural and rural society has total population of 140 million living in a small area of only about 148,000 km2 indicating average density of close to 1000 people per km2. The country is least endowed with mineral resources and her main resources are land, water and people.

Conventional literacy rate (percentage of people who can read and write) is still low (50% for males and 41% for females above 7 years age in 2001) but school enrolment is nearly universal, school dropout is on the decline and gender parity in both primary and secondary schools has been achieved. It is however important to note that, low illiteracy does not necessarily mean poor knowledge, particularly in the context of the rural communities, as far as their life and livelihoods are concerned. This is because of the richness of local knowledge which can very efficiently interact with new information and ideas in agriculture.

2.2 Profile of the Agriculture Sector

Crop Sub Sector

According to Sample Agriculture Survey 2005, 59.14% of the 24.56 million rural households had farm holdings, a decrease from 66.18% of 17.8 million rural holdings as per 1996 Agriculture Census. Average agricultural land per farm household in 2005 declined to 1.26 acres from 1.50 acres in 1996. In 1996 average own land of all rural holdings was 1.14 acres which has declined to 0.90 acres in 2005.

Of the 17.8 million rural households as per the Agricultural Census of 1996, about 52.7% were functionally landless (owning no land or owning below 0.5 acre), close to 23.5% were marginal farmers who owned between 0.5 to 1.49 acres, about 22% were small and marginal farmers and only about 1.7%

were large farmers (above 7.5 acres). The functionally landless group owned about 13% of total land but less than 4% of cultivable land. The richest 1.7%, on the other hand owned about 18% area.

While landlessness is quite high and average farm size is very low, Bangladesh agriculture is loosing about 1% cultivable land annually to make room for competing uses, mainly for homestead, urbanization and infrastructure building.

Bangladeshi farmers are basically owner operators, 66% of all holdings followed by owner cum tenants, about 24% holdings. Only about 10% are purely tenant operators most often by sharecropping terms. Of the total cultivated area of about 20.5 million acres or close to 8.3 million ha, about 80% is under owner operation and 20% under tenant operation.

Agriculture sector accounts for about 23% of the national GDP as of 2004, a decline from 26% in 1995. Crop sub sector is the largest contributor, accounting for 13% of the GDP in 2005, a decline from 15.4% in 1995.

Changes noticed in cropping pattern include decline of both area and production of local varieties of rice in all seasons. Boro HYV and Aman HYV increased in both area and production. By now, Boro HYV has become the dominant crop but yield increase in each type was nominal. Jute acreage and production decreased in the recent years while minor cereals, mainly maize, fruits and vegetables showed some increase. Despite some trend of crop diversification, cereals still dominate and account for about 82% of the cropped area.

Livestock

The sub-sector's contribution to the national GDP is close to 3% which is 13% of the agriculture sector. The sub-sector is growing faster, close to 5% annually in the recent years (2002-03 and 2003-04) and particularly the poultry and dairy have bright prospect because of higher income elasticity of the produces. According to Agricultural Census 1996, about 76% of the enumerated 17.8 million rural peasant holdings (*grihasth*) had poultry, 39% had duck 46% had cattle and 31% had goats. Across economic categories, poorer households tend to rear poultry more frequently than larger animals like cattle and buffaloes.

Until very recently, 100% eggs and poultry was produced in the backyard farms. This scenario has changed and small poultry farms are growing. Still, backyard poultry and duck rearing remained important and will continue to meet substantial part of egg and meat production. Backyard poultry sector is particularly important for providing cash income to the poor rural women.

Fisheries

The fisheries sub sector experienced massive structural change over the past three decades and this trend although slowed down is likely to continue. The sub sector grew annually between 6.8 to 10.0 percent during 1995 to 2000. It has good export market and rapid expansion of both export and local markets provided quality assurance to international standards.

Within fisheries sub sector, aquaculture is growing faster while the shares of both inland capture fisheries and marine fisheries have sharply declined. The scope of the NATP is to a great extent relevant to aquaculture of fish and shrimp. Conservation of inland fisheries is another area of interest to target beneficiaries and deserves high priority.

2.3. Gender

Gender can be defined as culturally constructed roles and behavior of human males and females in particular societies. The traditionalist view expecting that women must "stay home" and devote full attention to household chores, is rapidly changing and women are now taking larger roles. Women in Bangladesh are no longer confined within homestead boundary or inside veil. Currently, they contribute significantly to the household as well as to the economy. Over the last couple of decades, women's participation in the extra-household income earning activities has changed a lot and the structure of labor force participation has changed.

Presently, 26.1% women (against 87.7% men) are economically active (2003), meaning that they work beyond household chores. The change is substantial, from the level of 9.8% in 1986. However, there is substantial difference between men's and women's employment structure. Of the 26% economically active women, 48% are unpaid family worker against less than 10% for men. Typically, women are engaged in low-remunerating jobs requiring low technical skills and educational background. Things are changing but it is still long way to remove or at least reduce gender gap in income.

Literacy rate of women increased faster than that of men over the last ten years. But women are still lagging behind. Scholl enrolment of girls has improved tremendously and gender parity has been achieved in both primary and secondary levels. In the tertiary level also, women enrolment is increasing. Presently, a little over 25% of the University students are women. The most encouraging information is that, as high as 42% of the Medical students are women, an increase from 34% only 6 years ago.

Female Headed Households

Maniruzzaman (1999) found 7.5% and 10.2% female headed households in two Dhaka slums in areas with 558 and 540 households. Female headed households are much lower in proportion in the rural areas. Quick surveys during this social assessment in six villages found only about 3 to 5 percent female headed households. Maniruzzaman (2000) in another study in rural Mymensingh found only 3 female headed households in a community of 93 households.

Although proportion of female headed household is quite low, it is quite high among the poor. The poorest 5 to 10 percent households are predominantly female headed. It is also observed that rural household income is to a great extent a function of household demography. Households without adult male earner tend to be the poorest.

Women in agriculture

In the agriculture sector, women's role in rice and other crop production, particularly in post-harvest and seed preservation remains sizeable and their involvement in fisheries and livestock is expanding. In the past, women's involvement in these sub sectors was limited to very subsistence level like backyard poultry. Now it has expanded to commercial poultry and aquaculture, beyond homestead ponds.

Given these, the project recognizes that the women's participation is crucial to the success of the project since addressing gender issues will result in benefits that go beyond the spheres of the project, into household livelihood improvements in particular and household food and nutritional security, in general.

2.4 The Study of Five Villages

As part of Social Assessment under the NATP preparation, a total of five villages were studied using PRA method and quick surveys in five regions of the country. The study villages represented varying geographical and socio-economic characteristics and it was not an intention to generalize the findings. For the country and administrative divisions, available secondary data were extensively used and the study villages provided evidences of similarity, variability and recent changes. Salient features of the findings of the study villages are provided in the text (Chapter 2) while detailed description is provided in the annex.

3. Stakeholder Analysis

The stakeholder analysis provided in the text (Chapter 3) comprises an indicative list of relevant stakeholders at various levels – national, regional, district, Upazila, Union and village and a comprehensive list of issues and concerns that affect each group, again at the national to village levels.

4. Present Agricultural Research and Extension Systems

National Agricultural Research System (NARS) as constituted in Bangladesh includes an apex research organization, the Bangladesh Agricultural Research Council (BARC) and ten Agricultural Research Institutions in the public sector. The extension system comprises mainly of the three extension agencies but with limited interaction with other actors, the private sector, the NGOs and local government. Both

systems however lack expertise and orientation in several areas including social sciences, environmental management, ICT etc. Capacity building in such areas is important to cater the growing needs making the system demand-led and pro-poor.

5. Issues of Significance

Issues of significance in the agricultural research and extension systems include the following:

a. Participation, inclusion and equity: To make sure that the diverse primary stakeholders are reached and particularly the weaker groups like the poorest farmers and women are not excluded requires enhancing their participation. Enhancing participation would require involving committed and capable local NGOs who have already demonstrated competence of working with the poor farmers and women groups.

b. Elite capture: Elite capture of community based organization is a potential risk in all components but more importantly in the extension and value chain components. Avoiding elite capture requires awareness of the problems and the local contexts - identify the elite, the touts, their stakes and linkages - and then take proactive measures. Experienced NGOs, long partnership with communities, organizing them and helping their capacity building, ensuring wide participation of the local stakeholders including the poor in the CBOs are essential from both NGO side and the executing agencies.

c. Social intermediation/ community mobilization support: Social Assessment work in two of the five villages revealed that the local communities need administrative support and social intermediation for consensus building between conflicting communities on the management of local resources like water bodies. The NGOs in cooperation with local government can assist in the community mobilization process while the involved extension departments must take the leading role to initiate and institutionalize it in cooperation with local administration.

d. Transparency and accountability of the service delivery systems: Officially, the field level extension officials are accountable to the line departments through Upazila and district offices. Actually there is no accountability since field level supervision is inadequate, reporting limited to paper work and politically motivated staff unionism. A transparent and accountable farmer-led public-private-NGO partnership in extension service is needed to overcome the present problems of the extension system and research – extension – farmer linkage.

e. Information, Education and Communication Campaign: Implementation of the project activities requires sharing of information with the relevant stakeholders. All stakeholders should be enabled to access project related information through press, electronic media, website, postage and other forms of correspondence.

6. Project Design Elements for addressing the Issues of Significance

The NATP research component aims at enhanced efficiency and effectiveness of the NARS through:

- Institutional reform by revising the Acts of BARC and ARIs and improving their capacity
- Developing a sustainable funding mechanism for pro-poor and need based research through supporting competitive grants and sponsored public goods research
- Improving partnership among research organization, nationally as well as internationally along with enhanced research – extension – farmer linkage.

For the extension component, the project envisages a fully decentralized extension services of crops, livestock and fisheries sub-sectors at the Upazila level. With this aim, an Upazila Extension Coordination Committee (UECC) will be established to plan, execute, monitor and evaluate all types of extension activities. This will include preparation of Upazila extension plan for crops, livestock and fisheries by aggregating the Union Micro Plans. The Union Micro Pans will be prepared by village level common interest groups (CIGs) with the assistance of Union Extension Facilitation Team (UEFT). The UEFT would comprise SAAO of DAE and village level extension agents of the DLS and DOF, field staff of partner NGOs and local government (UP) representatives.

The UEFT will have an office at the UP complex or UP office. The UP chair will ensure office accommodation. This will function as one stop Farmers' Information and Advice Centre (FIAC) which

will remain open all working days during office hours. At least one SAAO will be present on rotational basis to make sure that farmer can access information and services and the office is never unattended.

7. Social Management Framework

Although the project is not expected to have any adverse social and environmental impacts, yet it has developed a Social Management Framework (SMF). The SMF comprises legislative framework and a negative list based on a number of exclusion criteria and a screening process. The SMF has also suggested some mitigating measures to avoid or at least minimize some of the unforeseen adverse social impacts.

Exclusion criteria

The NATP will adapt follow a set of exclusion criteria to make sure that research proposals under the CGP and SPGR having risks of developing socially harmful technologies (adversely affecting the livelihoods of the poor) are right way rejected. An indicative list of exclusion criteria is provided below:

- GMO and nuclear agriculture where results are unpredictable
- Physical obstruction and closing water flows affecting aquaculture, waterways, fisheries
- Grabbing common property like grazing area, fishing area
- Deforestation or otherwise affecting culture and livelihoods of surrounding *adibasi* groups
- Requiring land acquisition leading to involuntary resettlement.

Screening process

While the exclusion criteria will help accepting particular sub project for consideration or outright rejection, the screening process will evaluate merits of the proposals based on a set of subjective criteria. By each criterion a proposal will be assigned positive and negative scores in the assessment of the evaluators. The project will provide an indicative list of criteria for positive or negative scoring which may include:

- Participation
- Inclusiveness and equity
- Affordability of the poor
- Soundness of technology and adaptability
- Displacement of tenants, small and marginal farmers
- Women's employment, income and drudgery on women.

Mitigating Measures – to be applied to the Extension and Value Chain Components

The outcomes of the extension component are tangible and immediate. Also, the effects and impacts are direct and the affected and benefited people can be easily identified and targeted. Therefore, a more specific safeguard management plan will be applied which comprises a tentative list of probable negative impacts and suggested mitigating measures. The issues identified include (a) elite capture, (b) sustainability, (c) prioritization, (d) participation, (e) displacement and marginalization of the weaker groups.

The suggested mitigating measures include (a) social intermediation through NGOs in partnership with local government, (b) building up of responsible and representative community organizations and their capacity building, (c) specially targeting the disadvantaged groups, (d) participatory planning and monitoring at the grassroots with the facilitation of NGOs, extension agencies, CBOs and local government, (e) training at farmer's field addressing problems identified by the farmer groups and trainee and training time decided by the groups, (f) micro credit, input supply and market linkage and contract farming support where necessary and demanded by the farmer groups.

1. Introduction

1.1 National Policy Framework

The principal goal of Bangladesh's economic policy is to reduce poverty so as to lift vast majority of the people above the poverty line and improve the quality of life for the average citizens (GOB 2005.a pp 1). Although considerable progress has been achieved in the fight against poverty'[1] Bangladesh has still long way to go if the millennium development goal of reducing poverty to about half of the 1990 level by 2015. This means that, poverty must be reduced to about 29% of total population by 2015 which was about 59% in the early 1990s and close to 49.8% in 2000 (ibid p-7).

According to the PRSP, annual economic growth rate must be 6 to 7 percent[2] on a sustained basis coupled with population growth rate of not exceeding 1.5 percent and the bulk of the growth should come from the agriculture sector which is still the largest contributor to the GDP, 23% and the rural non farm sector which accounts for another 33% of the GDP. These two sectors provide main livelihoods to three fourths of rural people and the rural poor represent 85% of the poor people in Bangladesh.

While growth in the last couple of decades was rather encouraging, it was not accompanied with equity, hence had lower than proportionate impact on the poverty reduction. Gini coefficient for the urban area shot up from 0.33 in 1991/92 to 0.44 in 2000. Rural gini coefficient also increased from 0.27 to 0.36 over the same period (GOB 2004 pp-16). Had income inequality during the period not worsened, rural poverty would have declined further three percentage points and urban poverty by six percentage points.

An examination of the sources of inequality however suggests that daily wage labor income followed by agricultural income contribute highest to reduce income inequality (GOB 2004 p-19)[3]. Hence, a pro-poor growth strategy would mean support to agriculture and wage employment, the bulk of which is in the rural sector and is directly or indirectly related to agricultural growth.

1.2 The NATP and its Objectives and Components

The above observations provide strong arguments to channel more resources to develop the agriculture sector as a pro-poor growth strategy with an aim to attaining the targets of the MDG. The country's poverty reduction strategy therefore has emphasized the need to support the agriculture sector as a priority area (GOB 2005.a pp-xxi). Within the broader framework of poverty reduction strategy, the National Agricultural Technology Project is proposed to be undertaken by the Government of Bangladesh with the following key objectives:

e. Strengthen the national agricultural technology system,
f. Increase productivity,
g. Accelerate and diversify production systems, and
h. Enhance market opportunities and market linkages, especially of small and marginal producers of high value commodities.

The proposed NATP comprise of the following three main components:

d. Agricultural Research Support: This will comprise establishment of an endowment fund to provide an income stream for supporting competitive grant program (which will be of short gestation period and demand driven field based research where public, private and NGO sectors as well as individuals will have access on competitive basis) and a longer term sponsored public good research (SPGR) in which mainly ARIs, Universities and other institutes are likely to compete. To manage the CGP, the GOB would establish an independent Bangladesh Agricultural Research Foundation, called Krishi Gobeshona Foundation (KGF) and the BARC would have enhanced role in the NARS through legal and other reforms and institutional efficiency enhancement.

[1] Bangladesh's achievements are in track with the requirement of the MDG in several indicators such as reducing child and infant mortality, expanding primary and secondary education, eliminating gender gap in the primary and secondary education and reducing population growth rate from 2.5% (1961-74) to 1.54% (1991-2001).
[2] Growth rate in the recent past was around 5% which has increased to over 6.5% by mid-2006.
[3] Source of inequality in the rural sector was mainly outside of agriculture such as enterprise income and remittance.

e. Agricultural Extension Support: The main focus of the component would be to strengthen the emerging decentralized pluralistic extension system and enhancing institutional efficiency. Decentralization of extension service would be based on lessons learnt from successful approaches pilot tested in Bangladesh in the recent past, such as the Local Extension Agent in Fisheries (LEAF) and the decentralized technology transfer mechanism of the National Agricultural Technology Project of India (NATPI). The key element of decentralized extension system would include support to community based organizations comprising village level Common Interest Groups (CIG) and their federation(s), Producer Organization (PO) at the UP, Upazila and district levels, and UP level farmers' information and advice centre, Institutional efficiency enhancement, improved inter-agency cooperation and linkages with the private sector and NGOs services. This will also include better linkages between research, extension and farmers. Institutional efficiency enhancement will also include setting up of a revolving fund at the Upazila level from which the extension departments – Agricultural Extension, Livestock and Fisheries would take advance for operating expenses and replenish the same when funds for the same purpose are available from the Government.

f. Development of Value Chain: The main focus of the component would be a few selected high value commodities based on comparative advantage, farmer preference and market demand- for both local consumption and export. Indicative list of such commodities include (a) rice – for food security reason and the need for releasing land from this low-remunerating crop for a more diversified cropping system, (b) maize- for demand as poultry feed, (c) horticulture crops (fruits, vegetables and floriculture), (d) livestock- mainly dairy and poultry, and (e) fisheries – mainly pond aquaculture and coastal shrimp aquaculture. The component comprises two sub-components – farmer market linkages through promotion of contract farming and quality improvement; and knowledge management and technical support.

1.3 Geographical Coverage

The research component is nationwide by nature and would support research proposals coming from the ARIs and other relevant institutions located anywhere in Bangladesh. The extension component will be executed in about 120 Upazilas in five of the six administrative divisions. The Upazilas of northwestern Rajshahi division will not be included under the extension component since ADB is assisting implementation of a similar project there. The Chittagong Hill districts will also not be included as separate institutional arrangement is required to take up GOB projects in the Hill Tract areas. The value chain component will cover selected Upazilas in any region. Under the second and third components, the Upazilas would be selected using a set of criteria including (a) poverty levels, (b) agro-ecological potential, (c) status of rural infrastructure, (d) status of natural resource base, and (e) institutional capacity.

It is important to note that, while selection based on the first criterion favors poverty stricken and less developed areas, other criteria are likely to favor relatively developed areas. Trade-off between criteria deserves careful consideration and involves subjective judgments and therefore a list of selected Upazilas for each component will be provided in the Project Document.

1.4 The Project Preparation Team and the Task under Social Assessment

As part of the formulation of the proposed National Agricultural Technology Project (NATP), a group of 23 national consultants were engaged to prepare a detailed report called "Project Description and Implementation Plan". The group of consultants included a Social Scientist to make a Social Assessment of the proposed project interventions. This report is an outcome of the social assessment part of the PPT.

1.5 Approach and Methodology

The task began with a review of relevant documents, discussion with the relevant research organizations and government departments. These were supplemented with a Participatory Rural Appraisals in a total of six villages during March-April and two regional and a national workshops held in Mymensingh, Iswardi and Dhaka in May 2006.

2. Beneficiary Assessment

2.1 General Socio-Economic Profile of Bangladesh

High density of population: Bangladesh, the world's most densely populated agricultural and rural society has total population of 140 million living in an area of only about 148,000 km2. Bangladesh is however blessed with a vast fertile deltaic plain land, one of the world's largest fresh water sources and relatively young population (average age 22 years and majority in the age group 15 to 59). Conventional literacy rate (percentage of people who can read and write) is still low (50% for males and 41% for females above 7 years age in 2001) but school enrolment is nearly universal, school dropout is on the decline and gender parity in both primary and secondary schools has been achieved.

It is however important to note that, low illiteracy does not necessarily mean poor knowledge, particularly in the context of the rural communities, as far as their life and livelihoods are concerned. This is because of the richness of local knowledge which can very efficiently interact with new information and ideas in agriculture.

Poverty: One half of Bangladesh people were poor in 2000[4] with substantial rural urban difference, 53% in rural area compared to 37% in urban area. Dhaka city and surroundings had lowest poverty (27 to 29%) against 62 to 65% in rural areas in the districts of Rajshahi division.

Vulnerable middle: During 1991-92 to 2000 yearly growth of per capita consumption expenditure was close to 2% against mean per capita GDP growth of 1.5%. Importantly, the growth curve of per capita consumption expenditure was 'J' shaped (World Bank 2005.b pp 7), the bottom 20% having 1.25 to 2.0 percent growth while the middle 40% had very little gains (third to sixth deciles) but the top 20% had very high growth, above 2% to up to 3.5 percent. It implies that, despite increasing inequality, the poorest ones also improved to some extent, but those in the middle improved only marginally and appeared vulnerable.

2.2 Profile of the Agriculture Sector

2.2.1 Land ownership and Tenancy pattern

The country's poverty reduction strategy paper (GOB 2005.a pp-15) noted that

> "Land used to be the source of both wealth and income and of power and status in rural Bangladesh. This centrality has undergone drastic changes. Land is no longer the principal basis of power and status; neither does it serve to limit the livelihood opportunities of the poor. The subsistence orientation of production too has given way to a more complex and fluid livelihood strategy. Land has assumed a new multi-functionality within this multiple livelihood strategy far removed from its connotation of power and dominance."

However, land remains the main livelihood asset in the rural Bangladesh and it is still an important (not a determinant) indicator of poverty, though not the single source of livelihood for most rural households. It is evident that incidence of poverty decreases with the increase of landholding. While 57% of the households owning less than 0.5 acre cultivable land are poor, it drops to 13% for households owning 5 acres or above. A little less than one half (46%) of the households are poor in the landholding group 0.5 to 1.49 indicating that 1.5 acres land is the lower limit to lift probability of being non-poor above 50 percent given existing level of productivity and land use pattern. It is also important to note that, 43% of those owning no land or less than 0.5 acre land are non-poor, indicating that a substantial proportion of the functionally landless households are also non-poor.

According to Sample Agriculture Survey 2005, 59.14% of 24.56 million rural households had farm holdings, a decrease from 66.18% of 17.8 million rural holdings as per 1996 Agriculture Census. Average agricultural land per farm household in 2005 declined to 1.26 acres from 1.50 acres in 1996. In 1996 average own land of all rural holdings was 1.14 acres which has declined to 0.90 acres in 2005.

[4] Latest BBS data shows poverty reduced to 42.1% of total and 43.3% of rural population (Economic Survey 2005 pp 165).

Table- 1 below shows land ownership pattern of the country. Of the 17.8 million rural households as per the Agricultural Census of 1996, about 52.7% were functionally landless (owning no land or owning below 0.5 acre), close to 23.5% were marginal farmers who owned between 0.5 to 1.49 acres, about 22% were small and marginal farmers and only about 1.7% were large farmers. The functionally landless group owned about 13% of total land but less than 4% of cultivable land. The richest group, less than 2%, on the other hand owned about 18% area. However, this does not mean that land redistribution is a viable option to reduce poverty. Even if all large holdings are forced to give away land exceeding 7.5 acres, only about 864,000 acres land would be available and its redistribution could move only about 576,000 households above poverty line (3% of rural households) as per 1996 census and this would be much lower now because of further splitting of the holdings over the last ten years.

Of the total cultivable land, about 48% was irrigated. Percentage of land under irrigation varied marginally across holding size, the large holdings had lower proportion of land under irrigation than the small and marginal farmers. Higher manpower per unit area of land and higher urge to survive on small holdings motivated - rather compelled the small and marginal farmers to cultivate more intensively and with higher irrigation cover.

Table-1: Pattern of Land Ownership 1996 (Area in Acres)

Type of Holding	Number of Holdings	% of holdings	Total Area	% Total Area	Cultivable Area	% Cult Area	Irrig Area	% irrig
No Land owned/operated	38,245	0.21	2	0.01	-	-	-	0
No Cultivable Land Owned	5,070,712	28.44	1,087	5.35	-	-	-	-
Cult land 0.01-0.04 acre	920,988	5.17	216	1.06	22	0.12	1	4.55
Cult land 0.05-0.49 acre	3,356,400	18.83	1,317	6.48	655	3.69	310	47.33
Functionally Landless	**9,386,345**	**52.65**	**2,622**	**12.90**	**677**	**3.81**	**311**	**45.94**
Marginal 0.50-0.99	2,437,231	13.67	1,681	8.27	1,431	8.05	799	55.84
Marginal 1.00-1.49	1,757,073	9.86	1,996	9.82	1,803	10.15	984	54.58
Marginal Farm	**4,194,304**	**23.53**	**3,677**	**18.08**	**3,234**	**18.20**	**1,783**	**55.13**
Small Farm 1.50-2.49	1,872,089	10.50	3,209	15.78	3,198	18.00	1,616	50.53
Medium Farm 2.50-7.49	2,077,784	11.65	7,498	36.88	7,537	42.41	3,507	46.53
Large 7.50 & above	297,665	1.67	3,327	16.36	3,125	17.58	1,370	43.84
All holdings	**17,828,187**	**100.00**	**20,333**	**100.00**	**17,771**	**100.0**	**8,587**	**48.32**

Source: Agriculture Census 1996

While landlessness is quite high and average farm size is very low, Bangladesh agriculture is loosing about 1% cultivable land annually to make room for competing uses, mainly for homestead, urbanization and infrastructure building.

Type of the Tenancy as in the Agricultural Census 1996 is shown below in **Table-2**. It shows that Bangladeshi farmers are basically owner operators, 66% of all holdings followed by owner cum tenants, about 24% holdings. Only about 10% are purely tenant operators most often by sharecropping terms. Of the total cultivated area of about 20.5 million acres or close to 8.3 million ha, about 80% is under owner operation and 20% under tenant operation.

Table -2: Tenancy Pattern

Description	Number	Percentage of holdings	Operated Area (acres)	Percentage of Area
1.Owner Operator holdings	11,807,551	66.23	12,093,126	59.04
2. Tenant Operator	1,814,595	10.18	433,649	2.12
3. Owner cum Tenant	4,206,072	23.59	7,957,785	38.84
4. Total Owner-operated area= 1+ owner operated part of 3			16,323,112	79.68
Total Tenant operated area = 2 + Tenancy part of 3			4,161,448	20.32
All holdings	17,828,218	99.99	20,484,560	100.00

Data Source: BBS, Agricultural Census 1996.

2.2.2 Major Crops: Crop area and Crop Production

Changes noticed in cropping pattern include decline of both area and production of local varieties of rice in all seasons and decline of the area of also HYV Aus. Boro HYV and Aman HYV increased in both area and production. By now, Boro HYV has become the dominant crop but yield increase in each type was nominal. Jute acreage and production decreased while minor cereals, mainly maize, fruits and vegetables showed some increase. Despite some trend of crop diversification, cereals still dominate and account for about 82% of the cropped area. **Table-3** shows cropping pattern of the country.

Table-3: Crop Area, Total Production and Yield in Bangladesh

Crop Name	1998-99			2000-2001			2003-04		
	Area (000 acres)	Production (000 Tons)	Yield (Tons/ha)	Area (000 acres)	Production (000 Tons)	Yield (Tons/ha)	Area (000 acres)	Production (000 Tons)	Yield (Tons/ha)
Aus Local	2,429	889	0.904	2,123	981	1.141	1,854	896	1.194
Aus HYV	1,091	728	1.648	1,152	935	2.005	1,117	936	2.070
Aus Total	3,520	1,617	1.135	3,275	1,916	1.445	2,971	1,832	1.523
Aman B. Local	1,485	538	0.895	1,902	963	1.251	1,542	786	1.259
T. Local	5,935	2,980	1.240	5,297	3,348	1.561	5,110	3,205	1.549
HYV	5,342	4,218	1.950	6,911	6,938	2.480	7,378	7,529	2.521
Aman Total	12,762	7,736	1.497	14,110	11,249	1.969	14,030	11,520	2.028
Boro Local	737	544	1.823	499	367	1.817	514	405	1.946
HYV	7,978	10,008	3.098	8,797	11,554	3.244	9,230	12,432	3.327
Boro Total	8,715	10,552	2.991	9,296	11,921	3.167	9,744	12,837	3.254
Total Rice	**24,997**	**19,905**	**1.967**	**26,681**	**25,086**	**2.322**	**26,745**	**26,189**	**2.419**
Wheat	2,180	1,908	2.162	1,909	1,673	2.165	1,586	1,253	1.951
Minor Cereal	219	65	0.733	139	50	0.888	222	270	3.004
Total Cereal	**27,396**	**21,878**	**1.973**	**28,729**	**26,809**	**2.305**	**28,553**	**7,712**	**2.397**
Pulses	1,352	416	0.760	1,170	366	0.773	1,039	333	0.792
Oilseed	994	448	1.113	1,036	385	0.918	960	406	1.045
Spices	620	396	1.578	624	397	1.571	685	607	2.189
Jute	1,181	4,475	1.703	1,107	4,526	1.828	1,008	4,376	1.941
Tobacco	79	28	0.875	74	36	1.202	76	39	1.268
Betel nut	89	28	0.777	190	45	0.585	191	55	0.711
Betel Leaves	34	74	5.376	38	82	5.330	41	93	5.603
Fruits	458	1,430	7.712	473	1,486	7.760	536	1,772	8.166
Winter Vegetables	364	1,059	7.186	379	1,065	6.941	395	1,131	7.072
Summer Vegetables	208	424	5.035	247	513	5.130	283	608	5.307
Potato	605	2,762	11.276	616	3,216	12.895	669	3,908	14.429
Sweet Potato	102	383	9.275	97	357	9.091	88	320	8.982
Sugarcane	430	6,951	3.194	417	6,742	3.195	404	6,484	3.171
All Crops	**33,482**	**33,801**	**2.494**	**34,780**	**39,283**	**2.790**	**34,928**	**47,844**	**3.383**
Area in 000 ha	**13,555**			**14,081**			**14,141**		

Note: yield for sugarcane is converted to sugar equivalent, Source: BBS, Statistical Yearbooks 2001 and 2004

The agriculture sector accounts for about 23% of the national GDP as of 2004, a decline from 26% in 1995. Crop sub sector is the largest contributor, accounting for 13% of the GDP in 2005, a decline from 15.4% in 1995.

Crop sector extension service has strong network of Sub Assistant Agriculture Officer (formerly called Block Supervisor) at the block level, usually 2 to 3 per Union Parishad. But service delivery to the farmer level remained weak mainly because of unstable operational funding, inadequate supervision, wide spread staff unionism, lack of transparency and accountability and low interaction with local government and NGOs and complaints of staff absence in nearly universal.

2.2.3 Livestock

The sub-sector's contribution to the national GDP is close to 3% which is 13% of the agriculture sector. The sub-sector is growing faster, close to 5% annually in the recent years (2002-03 and 2003-04) and

particularly the poultry and dairy have bright prospect because of higher income elasticity of the produces (poultry meat, eggs, milk and milk products). Local market of these products is quite large and rapidly growing.

According to Agricultural Census 1996, about 76% of the enumerated 17.8 million rural peasant holdings (*grihasth*) had poultry, 39% had duck 46% had cattle and 31% had goats. Over all picture of livestock holding is shown in **Table-4.**

Table-4: Livestock holdings in Bangladesh, 1996

Particulars	Percentage of Rural Peasant Holdings	Average animal per holding
Holdings with cattle	45.8	3.0
Holdings with buffaloes	1.5	2.7
Holdings with goat	31.4	2.3
Holdings with sheep	2.8	3.4
Holdings with poultry	76.3	7.1
Holdings with duck	39.3	4.2

Note: Holdings essentially refer to rural households enumerated under Agricultural Census 1996.

The above Table shows an average picture. But, across economic categories, poorer households tend to rear poultry more frequently than larger animals like cattle and buffaloes.

National statistics however do not reflect recent development of small scale commercial poultry farming. Expert opinion reveals weekly production of broiler and layer chicks of 3.5 to 4.0 million and 300,000 to 400,000 respectively. Department of Livestock Services estimates as of end 2005 showed 118,526 poultry farms with estimated stock of 92 million live birds and 61,482 dairy farms. The country had estimated stock of another 92 million birds in backyard poultry.

Until very recently, 100% eggs and poultry was produced in the backyard farms. This scenario is changed now-a-days most of the rural Upazila and small towns each has a few hundred poultry farms. Many of the smaller poultry farms are operated by other wise unemployed young men and women, many receiving short training through Government departments like Livestock Services, Youths, and Women Affairs, based at the Upazila and district levels. Presently, the share of farmed egg and poultry production is rapidly increasing and that of backyard poultry is declining. Still, backyard poultry and duck rearing remained important and will continue to meet substantial part of egg and meat production. Backyard poultry sector is particularly important for providing cash income opportunity to the poor rural women.

Use of animal power, mainly cattle and buffaloes for tillage, rural transport, mustard seed and sugarcane crushing etc. has declined tremendously over the last couple of decades. Intermediate technology like power tiller, mechanized three-wheeler vans, pedal thresher, power crusher and motorized mustard crusher (*ghani*) has largely replaced animal-driven traditional practices. Cattle rearing are now basically meant for producing meat and milk. Demand for these is in-exhaustive and value-addition through linkage industry has good prospect and particularly in the case of milk, it has long tradition. Besides traditional marketing arrangement, modern marketing system is already introduced and proven although serving a tiny little fraction of the millions of small producers.

Duck rearing has potential in the *haor, beel* and coastal areas where substantial part of the land remains under water for about six months. Goat has one advantage that very poor households can manage it but its productivity is rather low and often conflicts with another important sub-sector, horticulture. Closed culture of goat is yet to be proven for extension to the smallholders.

Extension service remains weak for both backyard producer and smallholder commercial farmers. Larger commercial farms employ trained veterinary workers but small and backyard farmers have to depend on the public sector veterinary extension service. Although the DLS has infrastructure basically down to Upazila, quality of service and proportion of farmers reached are far below expectation and local needs. Increased manpower in the public sector is unlikely and therefore, alternative extension method-specialized service at the Upazila level and one-stop multi-purpose information centre at UP level with

strong inter-agency cooperation and linkage with beneficiary organizations (CIG, PO and Local Government) must be introduced.

2.2.4 Fisheries

The fisheries sub sector experienced massive structural change over the past three decades and this trend although slowed down is likely to continue. The sub sector grew annually between 6.8 to 10.0 percent during 1995 to 2000 which has slowed down to about three to four percent in the recent years (2003-04 and 2004-05), still above average agricultural growth of about 2%. The sub sector has further potential to grow as its produces have high income elasticity hence high growth of local market is foreseen. Also it has good export market provided quality assurance to international standards.

Within fisheries sub sector, aquaculture is growing faster while the shares of both inland capture fisheries and marine fisheries sharply declined. The scope of the NATP is however, to a great extent relevant to the aquaculture part of the sub sector, both pond aquaculture and coastal aquaculture, mainly shrimp and prawn. Conservation of inland fisheries resources through community based micro-interventions in resource management is another area of interest to target beneficiaries and deserves high priority.

Table-5 below shows relative share of inland capture, aquaculture and marine fisheries in Bangladesh as of 1987-88 and 2002-03. During the period share of inland capture fisheries declined from over 51% to 35.5% while the share of aquaculture more than doubled from 21% to about 43%. Share of marine fisheries also declined about 28% to 22%.

Table-5: Area and Production of Fish by Type of Fisheries

Type of Fisheries	1987-88				2002-03			
	Area (000 ha)	Total Catch/ Prod (000 Tons)	Yield (kg/ha)	% of prod	Area (000 ha)	Total Catch/ Prod (000 Tons)	Yield (kg/ha)	% of prod
Inland Capture (Rivers, Floodplains etc)	4,047	424	105	**51.27**	4,047	709	175	**35.49**
Pond	147	149	1,014	18.02	291	752	2,584	37.64
Baor	5.5	1.3	236	0.16	5.5	4.1	745	0.21
Shrimp farm	94	25	266	3.02	141	101	716	5.06
Aquaculture Total	362	175.3	484	**21.20**	437	857	1,961	**42.89**
Total Inland	4,409	599	136	72.47	4,484	1,566	349	78.38
Marine		228		**27.57**		432		**21.62**
Country Total		827		100.00		1,998		100.00

BBS: Statistical Yearbook 1992 and Yearbook of Agricultural Statistics 2004

Information presented above based on published data however provide only a partial view of the massive structural change. Rapid expansion of aquaculture through conversion of paddy land to fish ponds and large-scale seasonal aquaculture in the semi-closed water bodies and low-lying agricultural areas are already visible but not properly reflected in the published national statistics. This has also not reflected recent development and actual growth in coastal aquaculture. The National Sub Strategy on the Shrimp shows total farm area at 210,000 ha and DOF has indicated total shrimp farm area at 203,000 ha in 2003-04 while BBS published data still shows 141,000 ha shrimp farm area.

Like livestock services, the field level extension of the fisheries sector remained weak. However, the Department of Fisheries (DOF) has already developed and piloted an alternative extension approach incorporating more participatory methods and partnership with the beneficiary groups, NGOs and other service providers. The approach is called Local Extension Agent in Fisheries (LEAF) in which the DOF at the Upazila level provides training and other support to locally selected extension agents to reach necessary services to the fisher and aquaculture groups at the village level.

2.3 Gender

23.1 Overall situation:

Gender can be defined as culturally constructed roles and behavior of sexes. Nature fixes certain physical condition for human males and females which are universal and determine the biological relations essential for the survival and reproduction of the species. Such roles are invariable across culture and time. In contrast, each human society defines a set of culturally appropriate norms and behavior for human males and females, what is called gender.

Bangladeshi, more appropriately the *Bangalee* society is patriarchal in nature where men and women have markedly differentiated roles and status as in many other societies. Traditionally, women are expected to stay home and devote full attention to household chores while men are expected to work outside and feed the family as breadwinner. This basic philosophy made women subservient to men.

The traditionalist view is rapidly changing and women are now taking larger roles. Women in Bangladesh are no longer confined within homestead boundary or inside veil. Currently, they contribute significantly to their household as well as to the economy. Over the last couple of decades, women's participation in the extra-household income earning activities has changed a lot and the structure of labor force participation has changed. **Table- 6** provides Bangladesh's achievements in reducing gender gap in terms of several social and economic indicators.

Table - 6: Gender Differentiated Economic and Social Status

INDICATORS	National		Urban		Rural	
	Male	Female	Male	Female	Male	Female
Labor force Participation						
Labor force (million) 1985-86	27.7	3.2	4.1	0.6	23.6	2.6
Labor force (million) 2002-03	36.5	10.3	8.6	2.7	27.9	7.6
Crude Activity Rate 1985-86	53.6	6.4	55.0	9.3	55.4	9.3
Crude Activity Rate 2002-03	52.7	15.9	53.8	17.6	52.3	15.4
Refined Activity Rate 1985-86	81.2	9.8	78.8	14.0	81.9	9.0
Refined Activity Rate 2002-03 (1)	87.4	26.1	85.1	27.4	88.1	25.6
Employment Type 2002-03						
Employer	0.4	0.2	0.7	0.3	0.4	0.1
Employee	13.8	13.4	24.4	21.6	10.5	10.5
Self-employed	50.6	24.5	47.1	21.6	51.6	25.5
Day labor	22.9	9.6	17.3	10.1	24.7	9.5
Unpaid family worker	9.9	48.0	7.6	39.3	10.6	51.0
Domestic worker (paid)	0.1	2.5	0.1	4.3	0.1	1.8
Apprentice	1.0	0.6	1.3	1.2	0.9	0.4
Others	1.2	1.2	1.4	1.6	9.1	1.1
Health						
Infant Mortality/000 age <1yr 1996	68	67	52	49	78	74
Infant Mortality 2002-03	54	52	38	37	58	56
Child Mortality/000 age <5yr 1996	11.4	12.0	7.7	7.7	11.8	12.3
Child Mortality 2002-03	4.7	4.4	4.4	3.3	4.8	4.6
Maternal Mortality/000 LV 1991		4.72		4.02		4.81
1996		3.21		2.85		3.36
2002		3.15		2.04		3.4
Life Expectancy at Birth Yrs 1991	56.5	55.7	60.5	59.8	56.2	55.3
2002	64.5	65.4	67.1	67.7	63.9	65.0
Education						
Literacy Rate (age 7+) 1991	38.9	25.5	46.2	33.3	25.8	16.3
2001	49.6	40.8	64.9	54.8	44.4	36.7
Adult Literacy (age 15+) 1991	44.3	25.8	62.6	44.0	38.7	21.5
2001	53.9	40.8	70.3	57.1	47.9	35.9
Women's Share in Education	Students Fem %			Teachers Fem %		
Primary Schools (1986, 1996, 2002)	42.3	46.6	49.4	13.7	26.8	34.9
Secondary Schools (1998, 2000, 02)	45.2	46.7	50.0	14.3	15.7	19.2
Medical Colleges (1996, 98, 2002)	34.3	38.8	42.2	20.9	23.8	21.5
Engineering University (2000, 01, 02)	13.1	13.3	15.0	11.4	13.6	13.6
General University (2000, 01, 02)	24.2	24.9	25.2	-	16.1	16.1

Source: Bangladesh Bureau of Statistics, Statistical Yearbook 2004

Table 6 provides a very clear picture of the relative status of men and women in Bangladesh along with recent trends. In terms of most indicators, substantial improvement in gender equity is observed.

Presently, 26.1% women (against 87.7% men) are economically active (2003), meaning that they work beyond household chores. The change is substantial, from the level of 9.8% in 1986. However, there is substantial difference between men's and women's employment structure. Of the 26% economically active women, 48% are unpaid family worker which is a little 9.8% for men. More than one half of the economically active males are self-employed against one fourth of the working women. Day labors are few (10%) among working women compared to men (23%). This employment structure led to lower earning opportunities for women compared to men. While 66% of the self employed and 61% of the salaried women earned below Tk. 1000 per month 93% of the self employed and 86% of the salaried men earned above this level. Typically, women are engaged in low-remunerating jobs requiring low technical skills and educational background. Also the women are less likely to be trained and thus made incapable of taking better paid jobs. Things are changing but it is still long way to remove or at least reduce gender gap in income (currently av working women earn 58% of the income of av working men).

In the health sector, gender gap is not only reduced, it is nearly eliminated. In 1990s, rural women had a shorter life expectancy than men and girl child had about 10% higher probability to die below age 5. This is reversed by the turn of this millennium according to BBS data. Readers could doubt BBS mortality data because of weak registration system. But cross-check with Population Census 1981 and 2001 confirms reducing gap between boy's and girl's mortality before age 5.

Literacy rate of women increased faster than that of men over the last ten years. But women are still lagging behind. Scholl enrolment of girls has improved tremendously and gender parity has been achieved in both primary and secondary enrolment. In the tertiary level also, women enrolment is increasing. Presently, a little over 25% of the University students are women. The encouraging information is that, as high as 42% of the Medical students are women (2004), an increase from 34% only 6 years earlier.

Besides increasing enrolment of girls at all levels, proportion of female teacher is continuously increasing. By now, it is 35% in the primary level, 19% in the secondary level and 16% in the University level. It is very encouraging that, 21% of the medical teachers are women.

2.3.2 Female Headed Households

Available literature gives varying information pertaining to proportion of female headed households. Ashraf (1996) claimed that 20 to 30 percent of the urban slum dwellers are female headed households while it was said to be below 10% according to BBS (1996). Unfortunately the BBS statistical yearbooks and census reports do not provide gender segregated household data. So, the figures given in the reports like Ashraf can not be verified with authentic sources.

Maniruzzaman (1999) found 7.5% and 10.2% female headed households in two Dhaka slums in areas with 558 and 540 households. Female headed households are much lower in proportion in the rural areas. Quick surveys during this social assessment in six villages found only about 3 to 5 percent households female headed. Maniruzzaman (2000) in another study in rural Mymensingh found only 3 female headed households in a community of 93 households.

Although proportion of female headed household is quite low, it is quite high among the poor. The poorest 5 to 10 percent households are predominantly female headed. It is also observed that rural household income is to a great extent a function of household demography. Households without adult male earner tend to be the poorest. Such poor households are excluded even from the mainstream MFI services apprehending their inability to save regularly and pay weekly loan installments.

It was observed in a fishing community in southeastern Habiganj district, during the social assessment in one of the six villages that, the poorest female headed household was excluded from the fisher

cooperatives (although her husband was a fisher), hence deprived of the benefits of public fisheries, on the plea that "women can not be fisher". In this community women are barred to fish in the open area.

2.3.3 Women in agriculture

In the agriculture sector, women's role in rice and other crop production, particularly in post-harvest and seed preservation remains sizeable and their involvement in fisheries and livestock is expanding. In the past women's involvement in these sub sectors was limited to very subsistence level and home-based activities like backyard poultry. Now it has expanded to commercial poultry and aquaculture, within and beyond homestead boundary.

Both GOB projects and NGOs helped women trained in large numbers. It helped them managing own farms and many have developed skills to help other farmers and deliver extension services like poultry vaccinator and fisheries extension agents. Women are also receiving training at the Agriculture Training Institutes (ATI) and are working as DAE extension staff. Departments of Youths, Women, Agriculture, Livestock, Fisheries and BRDB are training thousands of women every year. Besides, NGOs and BRDB and several MFIs are giving small loans to women groups and individuals for both micro enterprises and household management. A good number of women have demonstrated considerable managerial and entrepreneurial skills. Many are managing small NGOs and business, including agribusiness, very efficiently.

Within agriculture, women are pivotal in respect of kitchen gardening and other homestead production, and thus contributing a lot to household food security. Their roles and functioning provide an opportunity to seek greater off-farm production options.

Given these, the project recognizes that the women participation is crucial to the success of the project. Besides understanding of their roles, needs and perceptions and women-centric constraints that limit their participation in the project designing, implementation and management should be appreciated. Further, it is well perceived that addressing gender issues will result in benefits that go beyond the spheres of the project, into household livelihood improvements in particular and household food and nutritional security, in general.

2.4 The Study of Five Villages

As part of Social Assessment under the NATP preparation, a total of five villages were studied using PRA method and quick surveys in five regions of the country. The villages represented varying geographical and socio-economic characteristics and it was not an intention to generalize the findings. For the country and administrative divisions, available secondary data were used extensively and the study villages provided evidences of similarity, variability and recent changes. The study villages are:

1. Fedainagar, Patuakhali Sadar Upazila – southern coastal, poor road network and high poverty
2. Rangtia, Adibasi village in Jhinaigati Upazila, Sherpur, Greater Mymensingh–North of Dhaka
3. Borabo, Palash Upazila, Narsingdi – Central region, near Dhaka, poverty very low.
4. Bhobanipour of Baroigram Upazila. Natore – Northwest, crop diversification began
5. Sujapur of Nabiganj Upazila, Habiganj – Fishermen's village in the northeast, high poverty

Salient features of the findings of the quick survey in five villages are presented in Table – 7 .

Table – 7: The salient features of five villages

Particulars of Features	Borabo, Narsingdi	Bhobanipur, Natore	Sujapur, Habiganj	Fedainagar, Patuakhali	Rangtia, Sherpur
Geographical Region	Central, Dhaka	Northwest, Rajshahi	Northeast, Sylhet	South, Barisal	North, Mymensingh
Road network	Excellent	Good	Good	Fair	Good
Paved road within village	Yes, bituminous	Concrete road touched the village	Bituminous road touched the village	Paved road 1 km from the village	Bituminous road ¼ km from the village
Distance from Dhaka km by Road	50 km	250 km	200 km	250 km	200 km
Road Journey hours from Dhaka	2 hours	4 hours	4 hours	8 hours	3.5 hours
Extent of local level Development	High	Moderate	Low	Low	Moderate
Community	Hindu 90%, Muslim 10%	Muslim 100%	Muslim 100%	Muslim 100%	**Adibasi** 100% (Sonaton Hindu)
Approximate number of households	120	500	125	300	100
Approximate Population	534	2500	750	1550	400
Households Census	120		110	72	25
Household interviewed	30	30	30	0	0
Average Family Size, national **4.9**	4.4	4.4	5.7	5.1	3.9
Av Earners M	1.6	1.6	1.7	1.4	1.3
Av. Earner F	0.05	0.05	0	0.1	1.3
Main Occupation (Males)	Agriculture 48% Day Lab 0% Business 14% Artisan 10% OSW 8% Services 20%	Agriculture 58% Day lab 2% Business 8% Transport 12% Services 16%	Agri 10% Fisher 70% Day Lab 5% Business 5% Rickshaw 5% Services 5%	Agri 30% Day Lab 30% Fisher 8% Rickshaw 12% Business 6% Services 14%	Agri 45% Day Lab 30% Rickshaw 8% Business 5% Services12%
Main Occupation (Females)	80% household chores only. 20% in teaching, NGOs, factories, hospitals. Dislike wage laboring in the village. Some manage poultry farm	90% household chores only. Some in Dhaka as Garment worker, maid, dislikes rice mill work	95% household chores only. Very few garments worker, maid, occasional post-harvest wage employment.	80% Household chores only. Others RMP Lab, occasional work post harvest, very few garment workers	100% women double work-household plus day lab plus own agriculture. A few teacher/ NGO worker
Poverty: National **49.8%**	Very low (20%)	Moderate (40%)	Moderately High (50%)	High (50-60%)	Low (30%)
Literacy Male (National 50% male literate) 2001	Illiterate 10% I-V 21% VI-X 48% SSC 16% HSC 5%	Illiterate 24% I-V 27% VI-X 20% SSC 13% HSC 9% BA 7%	Illiterate 40% I-V 33% VI-X 20% SSC 5% HSC 2%	Illiterate 50% I-V 30% VI-X 15% SSC 5%	Illiterate 10% I-V 25% VI-X 50% SSC 10% HSC 5%
Literacy Female (National 60% female illiterate) 2001	Illiterate 28% I-V 28% VI-X 36% SSC 8%	Illiterate 50% I-V 22% VI-X 20% SSC 4% HSC 2% BA 2%	Illiterate 55% I-V 23% VI-X 20% SSC 2% HSC 0%	Illiterate 60% I-V 20% VI-X 15% SSC 5%	Illiterate 10% I-V 30% VI-X 45% SSC 10% HSC 5%

Particulars of Features	Borabo, Narsingdi	Bhobanipur, Natore	Sujapur, Habiganj	Fedainagar, Patuakhali	Rangtia, Sherpur
Landholding	No homestead 3% No cult land 39% 1-50 dec 26% 51-151 dec 23% 151-250 dec 6% 251 + 6%	No cult land 20% 01-50 dec 23% 51-150 dec 27% 151-250 dec 13% 251 + 17%	No agr land 72% Below .5 6% 0..5-1.5 = 17% 1.5-2.5= 4% Above 2.5 1%.	No homestead 5% No agr land 50% Below .5 acr 30% 0..5-1.5 = 12% 1.5-2.5= 6% Above 2.5 3%.	No homestead 8% No agri land 20% With agr land 80% .01- 1.5 acre 60% 1.5- 3.0 acre 20%
Landlessness % **National 53%**	65%	50%	78%	80%	20%
Land Tenure: Owner-operator dominant, 20% land under tenancy	Mainly owner operator, Sharecropping & Mortgage little.	Mainly owner operator, Sharecropping & Mortgage little.	Owner operator is the norm	Smallholder lease out, medium ones rent in.	Owner operator 80% Tenant 20%
Major Crops	Mainly HYV Boro, pineapple, mango, jackfruits, papaya	Sugarcane, Aman paddy, wheat, mustard, pulses, spices, sugarcane	HYV Boro,	Local Aus and Local Aman. Pulses , and chilli	Homestead gardening, ginger, mango, litchis, banana, papaya, jackfruit
Non-crop Agriculture	Backyard poultry, milk cow, sheep, aquaculture and poultry farm	Date gur, papaya, mango, jackfruit, coconut, cattle, goat, backyard poultry	Open water fishery, backyard poultry and duck	River fishery, backyard poultry, duck, goat	Backyard poultry, milk cow, goat
Agricultural Extension Services	DLS service availed with incidental expenses. DOF aquaculture was active during FFP. DAE services rarely available. Fertilizer and pesticide dealer approached for advice.	DLS service availed with incidental expenses. DAE services rarely available. Fertilizer and pesticide dealer approached for advice. Sugar mills provide extension service to contract sugarcane farmers	DLS service availed with incidental expenses. DOF assists fisher cooperatives. DAE service rarely available. Fertilizer and pesticide dealer approached for advice.	DLS service availed with incidental expenist. DAE services rarely available. Fertilizer and pesticide dealer approached for advice.	SAIP project trained farmer and women group members but not much under normal GOB program.
Development priorities	Need activating GOB extension services. CIG and PO appreciated but demanded authority to plan at village and UP level.	Demanded CIG to improve backyard poultry by women groups.	Sustainable management of Beel Fishery. Need legal and administrative support for conflict resolution with other communities.	Participatory land use planning. Irrigation infrastructure available but knowledge of improved practices can help a lot.	SAIP started helping Adibasi groups but the project might be closed soon. Need sustainable program.
Source: NATP Social Assessment Fieldwork, March April 2006					

3. Stakeholder Analysis

Stakeholder analysis made in this section comprises two matrices. The first one involves listing of relevant stakeholders at various levels – national, regional, district, Upazila, Union and village. This indicates who would benefit from the project, who are likely to be affected and who are likely to shout for and against the project, often guided by group interest, rather than people's interest. The second matrix provides a comprehensive list of issues and concerns that affect each group, again at the national to village levels.

The matrices provided in **Tables 8 and 9** are prepared on the basis of literature review, experience of scientists and administrators and most importantly in the light of discussion with the primary stakeholders at the village level.

Table - 8 below provides an indicative list of stakeholders at the national to village levels, the beneficiary individuals and institutions under column 2 and non-beneficiaries under column 3 and 4. This is folloed by **Table – 9** describing issues and concerns of the relevant stakeholder groups.

Table – 8: List of Stakeholders at the National to Village Levels

Level	Beneficiaries	Affected	Other Interest Groups
National	GOB: MOA, MOFL, MOFE GOB Extension Department: DAE, DLS, DOF NARS: BARC and ARIs Agricultural Universities BADC, WARPO, BWDB, BRDB, BARD, RDA NGOS: BRAC etc. Private Extension providers, Contracting partners	Importers and sellers of obsolete technology and low quality inputs.	Non-partner NGOs, Media (printed and electronic) Politician Bureaucracy Contractors Business Associations **Trading Syndicates** **GOB Staff Union**
Division/ Region	Research Stations of ARIs DAE, DLS, DOF, BRDB, RDA, BARD, BADC Partner NGOS Private Extension Providers and R&D participants Contracting partners	Non responsive Trading intermediaries: *Aratder, Mohajon, Stockist (Majutdar)*	Non-partner NGOs, Media, bureaucracy Politician Contractors Business Associations **GOB Staff Union**
District	ARI Research Stations DAE, DLS, DOF, BADC, BRDB, Partner NGOs Private Extension Providers and R&D participants Contracting partners	Non responsive Trading intermediaries: *Aratder, Mohajon, Stockist (Majutdar)*	Non-partner NGOs, Media, bureaucracy Politician Contractors, **GOB Staff Union**
Upazila	DAE, DLS, DOF, BRDB, Local Government: Paurosova, Upazila Parishad Partner NGOs **CBO Federation PO**	Non responsive Trading intermediaries: *Aratder, Mohajon, Stockist (Majutdar)*	Non-partner Local NGOs Local politician, Contractor agents **GOB Staff Union**
Union	Union Parishad **CBO,** Community Leaders Producers and traders in quality inputs/ outputs/ value chain	Non responsive Trading intermediaries: *Faria* petty trader	Localized rent-seeking groups, *Tout and dalal*
Village	UP Members Village Leaders, **CIG** Producers and traders in quality inputs/ outputs/ value chain Crop, Livestock and Fish **Farmer/Fisher** **Landless/SM Farmers** **Women**, Adibasi Charlander	Non responsive Trading intermediaries: *Faria*, petty trader	Localized rent-seeking groups, *Tout and dalal*

Table 9: Issues and concerns of various stakeholder groups

Level	Stakeholders	Issues and Concerns / What they demand
National	MOA, MOFL, MOEF	Relevance of project to national policies and priorities Share of resource allocated to sub-sector Resource utilization
	NARS, BARC, ARIs, Universities, BARD, RDA	R&D Share, R&D priorities Authority (M&E) of respective /collaboration with implementing organizations
	Extension Agencies: DAE, DLS, DOF	Respective share and authority Implementing strategies of respective agencies
	Public corporation: BADC, Hortex	Project support for institutional strengtheining, business promotion
	Interested l NGOs e.g., BRAC	Enhancing role of NGO, civil society and CBOs in each component
	Private extension and other service providers Agribusiness company	Profit earning with service delivery, contract farming – PRAN, AFTAB, Milk vita, Arong
	Non-partner NGO, media	Focusing environmental and equity concerns and some might fight for a role in execution, monitoring
	Bureaucracy	Administrative control, Development Coordination
	Contractors, business syndicate	Profit making by participating or opposing depending on circumstance
	Politician	Supporting or opposing-considering partisan interest/vote bank.
Division/ Region/ District	ARIs, individual scientist	Strengthening respective ARI station Research in specific areas that may or may not be demand-led
	Extension Agencies	Strong implementing role, supervision, control on subordinate offices, NGOs, LGB, CBOs,
	Public corporation: BADC, Hortex	Project support for institutional strengtheining, business promotion
	Partner NGOs	Strong partnership with GO, minimum control of GO
	Non-partner NGO	Rivalry with partner NGOs, fighting for entry
	Private extension and other service providers	Profit earning with service delivery, contract farming, subsidised inputs
	Bureaucracy	Administrative control, Development coordination
	Contractor, business association	Own business
	Politician	Supporting or opposing based on local/national politics
Upazila	Extension Agencies: DAE, DOF, DLS	Direct fund flows, inter agency cooperation, low reporting burden, line agency command, control on NGO, CBO
	Veterinary Centre (one) and AI sub-centres (2 or 3 per Upazila)	Veterinary, Extension and AI services based at Upazila are reasonably accessed by farmers but require making incidental expenses.
	DOF Field Assistant – Occasional visits only	Increased facilities like transport, allowance
	NGOs	Strong partnership role
	Politician	Distributing resources
	CBO (Federation)	Official recognition, strong role in planning, implementing and monitoring, support for institutional strengthening, capacity building such as training.

Union	Union Parishad Chair/Member/ Women Member	Enhanced role of local government to plan, execute and monitor project activities. Right to monitor activities of extension staff within UP. Consolidation of village level extension plan at UP level.
	Field Level Extension Personnel of DAE	Increased facilities like transport, allowance, office at UP complex, leading role in the UP level UEFT. Staff Unionism and frequently reported staff absence.
	NGO Field staff	Community mobilization work. Working condition, linkage with UP, support of extension agencies
	Pesticide and Fertilizer Dealer	Farmers often seek their advice to decide on what to apply, when and how much. They are closer to farmers and are readily available than extension staff. One risk is overuse of chemicals and low use of eco-friendly IPM methods and manure.
	Sugar mill field staff	Extension in sugarcane only, input supply, credit to contract farmers
	Quack veterinarian (Vaccinator/ Animal Health Worker)	Farmers often depend on quack veterinarians who give herbal, homeopathic, allopathic and some times human medicine for the treatment animals. They charge nominal fees from farmers but are readily available. Upgrading their skills by proper training seems desirable since they will in any way continue this practice and farmer will take their service.
	Extension Agent like LEAF of DOF	Training, extension materials, toolkits, subsistence allowance, permission to charge nominal fees.
	Self-employed Poultry and Cattle Vaccinators	DLS and Youths Department train them. They buy vaccine from DLS at token price and provide vaccination service at the village level but not regularly. They can be very effective as village level veterinary extension agent. Need training, small equipment like thermo flask, regular supply of vaccine and medicine at low cost, linkage (with NGO, LGB, local communities) and support for community work.
	CIG (Federation)/ Existing CBOs	Need guideline, facilitation, recognition and capacity building support. Need linkage with extension agencies, NGOs and private extension providers and local bodies.
Village	CIG (existing/ new groups) Group of 20-25	Need guideline, facilitation, recognition and capacity building support. Need linkage with extension agencies, NGOs and private extension providers and local bodies.
	Commercial aquaculture and poultry farms.	Formal training at Upazila and higher levels for management/ technical staff/ worker.
	Crop, livestock and fish farmers (non-poor)	Enhanced extension service, quality seed and other inputs, market linkage
	UP member, Village Leaders (*matbor*)	Leadership role in CIGs.
	Poor Women, Female Headed Household, Women Farmer	Lack access to all sorts of extension service except under special projects. Need special targeting.
	Landless, SM Farmers, fish, backyard poultry/ duck farmers	Lack access to extension services, veterinary services and other support. Need special targeting.
	Open Water Fishing Communities	Conservation of fisheries resources and prevent destructive fishing by local influential groups. Need special targeting.
	Adibasi	Customary land rights, resource conservation, protecting cultural heritage. Priority: Horticulture crops, cattle, poultry and market linkage.
	Charlanders	Improved transport and trade network, social support during crisis months (FFW, VGD, VGF), extension and inputs for increasing pre and post-flood crops, shelter and animal feed for flood season and MFI linkage with trust-worthy NGOs.

4. SWOT Analysis of the Research and Extension Systems

4.1 Research System

Table 10 provides a simple SWOT analysis of the major ARIs especially relevant to the NATP. The ARIs most relevant to the NATP include BARC as the apex body, Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Bangladesh Livestock Research Institute (BLRI) and Fisheries Research Institute (FRI). BLRI and FRI are important for the NATP focus on livestock, dairy, poultry, fisheries and shrimp as high value agriculture while BARI and BRRI are important multi crop and rice research. In addition to the ARIs, the SWOT analysis includes agricultural Universities, NGOs and private sector as their role is likely to enhance in the near future.

Table – 10: SWOT Analysis of the Research Systems

Institute	Strength	Weakness	Opportunities	Threat
BARC	1. Apex body 2. Legal authority 3. Good physical facilities 4. Continued GOB and donor support 5. Linkage with external organizations	1. Limited authority 2. Limited funding 3. Operating fund too inadequate	1. Enhanced authority 2. Clarity of defining authority, role by revising Act. 3. Reorganizing	1. Proposed revision of Act and institutional reform do not materialize 2. Bureaucratic interference continues
BARI	1. Legal authority 2. Large institution with nationwide substation network 3. Continued GOB and donor support.	1. Limited funding 2. Shortage of well trained staff 3. Limited operating fund	1. Rationalization of substation network 2. Cooperation with other ARI, university, NGO, private sector 3. Reorganization	1. Restructuring and redirecting denied by the GOB bureaucracy
BRRI	1. Legal authority 2. Large institution with nationwide substation network 3. Continued GOB and donor support.	1. Limited funding 2. Shortage of well trained staff 3. Limited operating fund.	1. Good image 2. Good linkage with IRRI 3. Reduced yield gap between research and farmer	1. Not enough feedback from extension.
BLRI	1. Legal authority 2. Good physical facilities 3. Continued GOB and donor support	1. Frequent change of top positions 2. Limited funding 3. Unstable operating fund 4. Poor external linkage 5. Limited substations	1. GOB provides top leaders on sustainable basis 2. Funding improved 3. External linkage improved 4. Redirecting research agenda	1. Instability continues in senior positions 2. Redirecting research agenda not getting priority
FRI	1. Legal authority 2. Good physical facilities 3. Continued GOB and donor support 4. Coastal research stations	1. Lack trained manpower 2. Limited funding 3. Unstable operating fund 4. Poor external linkage	1. Redirecting focus to resolve inbreeding problem in hatcheries, shrimp, socio-economic. 2. Public private partnership	1. Regional research stations in the coastal areas remain understaffed and under utilized.
Public Sector Agricultural Universities	1. Experienced faculty 2. Good library, Lab 3. Teacher student interaction 4. Good linkage with external academic and research institutes	1. Exiting poor linkage with ARIs, NARS	1. Good network with external world. 2. Good linkage with field problems through thesis students and teachers as research guide	1. Student unrest and political disturbance
NGOs	1. Close relation with farmers and CBOs. 2. Poverty, gender, target group focus 3. Need based research	Lack trained scientists	1. Good market linkage 2. Cost-efficient	May lack institutional sustainability
Private Companies	1. Good relation with farmer and service providers 2. Need based and adaptive research	1. Lack trained scientists 2. May lack poverty focus	1. Good market linkage 2. Cost-efficient	1. Profit motive 2. May lack institutional sustainability.

4.2 Extension System

Table- 11 provides a SWOT analysis of the existing extension delivery systems. It covers GOB extension agencies as well as NGO and private delivery systems. Each has advantages and disadvantages. The public extension systems has nation wide cover but are dissociated from people. The NGOs are fine at the local level but lack sustainability while the private ones are likely to be run by profit motives, rather than service delivery aspirations. The matrix below analyzes all of these.

Table – 11 : SWOT Analysis of Extension Delivery Systems

Extension System	Strength	Weakness	Opportunity	Threat
DAE	1. Well formulated policy package (NAP, NAEP) 2. Large department with trained officer (SAAO) down to UP and block level. 3. Strong Training Institutes, ATIs, CERDI etc. 3. Has experience of executing a number of innovative projects in collaboration with NGOs. 4. Has collaboration with research and education	1. Good policy but low implementation 2. Staff lack accountability and staff unionism paralyses the system 3. Inadequate maintenance and operating fund under revenue budget 3. Unstable funding efforts closed once project funding ceases 4. Inadequate external linkage	1. Linkage with other agencies and local government 2. Train farmer, private extension providers 3. Staff training and institutional capacity building.	1. Inflexibility of the system continues 2. Lack of institutionalization 3. Partnership with local government, private sector not encouraged from above
DLS	1. GOB initiated policy formulation and making of strategies 2. Services are highly demanded by farmers even on payment	1. Yet to adopt policy. 2. Weak implementation arrangement 3. Field service weak, lack public accountability 4. Yet to introduce local extension agent	Linkage with other agencies and local government	1. Inflexibility of the system continues 2. Lack of institutionalization 3. Partnership with local government, private sector not encouraged from above
DOF	1. Good policy package and sets of strategies formulated 2. Service highly demanded in the case of high-value aquaculture like shrimp, even on payment 3. LEAF piloted and accepted as strategy	2. Strategies yet to be approved by the GOB 2. Weak implementation 3. Field service limited to Upazila level 4. LEAF yet to be widely replicated	Linkage with other agencies and local government	1. Inflexibility of the system 2. Lack of institutionalization 3. Partnership with local government, private sector not encouraged from above
NGOs	1. Pro-poor and most beneficiaries are women and landless. 2. Partnership with CBOs	Unsustainable and most NGOs discontinue once development projects are closed	Enhance linkage with CBOs and LGB	Service discontinuity
Private Sector: Dealers, Input suppliers, Output Purchasers	1. Demand-led 2. Closest to farmers 3. Direct interaction 4. Mutual benefits	1. Commercial motives rather than service delivery. 2. Some might misguide farmers motivated by self interest. 3. Some might lack expertise.	Linkage with research, training and extension agencies	Will not be interested where profit is low or gestation period is high

5. Issues of Significance

Chapter -4 provided SWOT analysis of the agricultural research and extension systems along with relevant constraints. This chapter focuses important issues pertinent to the research and extension systems.

5.1 General Issues

a. Inclusion and equity

Traditional low-intensive agriculture is less dependent on external inputs like chemical fertilizer, modern seeds and equipment. It is therefore poor-friendly and poorer farmers can participate in and benefit from it. With decreasing per capita availability of land, low-intensive agriculture, including fisheries and livestock, is unable to support the growing population. Intensification is therefore inevitable and new technological interventions begun in Bangladesh agriculture since 1960s. This has helped increasing productivity, particularly of rice, potato, fish and poultry mainly through introduction of modern varieties of seeds, agrichemicals (fertilizer, pesticide), modern equipment (mechanized irrigation, thresher, tiller etc.). This development has helped Bangladesh near self-sufficiency in rice and considerable crop diversification, despite doubling of population in about three decades and decreasing crop land nearly one percent annually. But this has been accompanied with some degree of inequality.

Intensification helped benefiting the landowners and enterprising farmers more than the landless. The landless and land poor are also benefited through increased wages and work opportunities. But those without active male labor force remained excluded to a great extent because many agricultural works outside of homestead area employ male labor rather than female labor. This is changing now and the rapidly growing intermediate technology in farm mechanization is increasing employment of both male and female labor. Example is increased use of power tiller and irrigation pump employing male labor as driver and mechanics but the same engine used for threshing is employing female labor winnowing crops. Besides, use of power tiller engine in husking machine reduced workload of women giving them opportunity to devote more time in childcare and various productive activities like poultry and other home based agriculture. So, there are instances that technology not necessarily displaces labor. It can benefit all, including landless and women, although not equitably.

Some of the technological interventions in the past have contributed to some degree of displacement of sharecroppers and marginal farmers. These are elaborated below:

Displacement of sharecroppers: Theoretically, labor saving technology and increasing profitability per unit area of land encourage landowners managing own land rather than sharecropping out, while traditional technology favors engaging sharecroppers. Sharecropping has been a traditional mode of production in Bangladesh and it helped many of the landless and land-poor households to participate in farming. This opportunity is shrinking as more and more farmers started cultivating nearly the whole of the agricultural area.

One example of the displacement of sharecroppers was massive expansion of commercial shrimp farming in the coastal region. Landowners found it more profitable to lease out land to shrimp farming entrepreneurs who offered gradually increasing rent and later the owners learnt shrimp farming and made own shrimp farms rather than sharecropping land for rice cultivation. Another example is converting paddy land to aquaculture ponds in Mymensingh region. These have increased profitability per ha land area but the sharecroppers and marginal farmers have lost tenancy right. Many of the displaced sharecroppers and marginal farmers became wage labor. Others entered rural non farm sector, often related to the new activities like aquaculture. With the trend of increasing real wages and economic diversification they may gradually overcome economic losses but regaining social status requires longer period. A sharecropper or marginal farmer becoming wage labor in shrimp farm or a rickshaw van driver could earn more than a very small tenant farmer but he is socially valued lower than before.

Displacement of sharecropper is therefore viewed negatively in the rural communities as it changes social status of the affected households from share cropper, *borga chasi* to day labour, *din major*. *Borga chasi* is socially better respected than *din major* even if a *din major* might earn higher than a *borga chasi*.

Displacement of marginal farmers - Too small and uneconomic holdings: It was observed in village Fedainagar of Patuakhali that owners of too small holdings, below 0.5 ha, tend to sharecrop out and then work as day labor. Very small holdings with present level of technology and intensification can not support even a small household of 5 to 6 persons. The marginal landowners therefore choose to work as day labor. In contrast, owners of 1.0 to 1.5 ha holdings, sharecrop some additional land to make the holding a bit economic and such households prefer sharecropping rather than wage employment because of their social position.

b. Pro-poor, intermediate, and women-friendly technology

Some level of the above displacement is inevitable because of continued splitting of farm holdings. It is not really bad if some of the too small holdings give up farming and take some other occupation. It reduces the burden of too many farm households on too small and continuously shrinking farm holdings. It also makes room for using cost-efficient equipment like power tiller, irrigation pump and threshers. These are intermediate technologies and are really essential during the peak season. The project interventions should be careful and make sure that intermediate technologies, rather than highly capital intensive technologies are encouraged.

Over the last three decades technological development in agriculture and rural society has to a great extent reduced women's drudgery. These include husking mills that totally eliminated manual husking of paddy and some other crops and tube wells eliminating fetching water from long distance. But women's involvement in threshing, poultry farming, pond aquaculture and homestead gardening has increased tremendously. Now, time has come to improve devices to clean poultry farms more systematically rather than manually only. Improving seed storage integrating indigenous practices with some modern methods can be very helpful.

c. GO – NGO and Public – Private Collaboration

Agricultural technology development and dissemination are no longer limited to public sector agencies. In all areas, such as adaptive research, extension, input distribution and market linkage; a number of NGOs, private companies, foundations and information media have demonstrated considerable capacity building. A few of them such as BRAC, Hortex Foundation, Gono Unnayan Prochesta have been mentioned under section 5. Many others are operational and capable of enhancing their role. One advantage of their larger involvement is making the services demand led, cost-efficient and less dependent on government agencies. This is thus making room for the public sector agencies to concentrate in more fundamental areas where private sector is unlikely to participate.

It was a necessity in the 1970s and 1980 to deliver most services, including distribution of fertilizer and marketing through public sector agencies. Private sector has developed a lot and some NGOs became actively involved and capable. Now, the Government agencies could take larger role in quality assurance such as of seed and market interventions to prevent malpractices.

Medium to large NGOs and private companies can have larger role in extension and value chain while larger NGOs, foundation and large companies can be involved in adaptive research and dissemination of technologies. Mobilizing communities at the grassroots could be delegated to medium to large NGOs in partnership with the CBOs, local government and extension agencies.

5.2 Issues Relevant to Agricultural Research System

This section discusses issues specific to the research component of the NATP. These could include but not be limited to the following:

a. Effective research coordination

BARC is the apex body in the NARS responsible for coordinating agricultural research programs of the ARIs. The ten public sector ARIs belong to four ministries, MOA, MOFL, MOEF and MOC. BARC is said to have limited authority to coordinate. But they lack authority and institutional capacity in terms of scientific and management personnel to oversee the programs of the NARS including the ARIs. Hence, restructuring the BARC and further amending their legal cover, the BARC Act is very important. The research system requires strengthening to address social issues aiming pro-poor technology generation.

b. Enhancing allocation of resources to agreed priorities

The agricultural research in Bangladesh suffers from inadequate and unstable funding. The system's three yearly average share in investment declined from 0.32% of the GDP during 1997/00 to 0.21% of the GDP during 2002/03 which is very low compared to international standard, average 2.8% for developed countries and 0.62% for developing countries. Funding has been unstable due to dependence on externally aided development projects. Funding is particularly unstable and too inadequate for operational expenses and therefore research programs can not be continued once particular projects are closed. Operating funds are rarely available beyond staff salary and particularly pro-poor development initiatives taken under specific projects are discontinued.

c. Need based public private partnership in agricultural research

Bangladesh agriculture is characterized by smallholder subsistence farming that limit possibility of private sector investment in research. Over the last few years, private sector business opportunities expanded in agro processing, seed industry and export of agricultural commodities. Capable private companies and NGOs are coming up and they can effectively participate in adaptive agricultural research.

d. Integrate universities as part of agricultural research system

Presently agricultural research is conducted mainly by the ARIs as part of NARS while research activities of the Agricultural Universities are not effectively linked with the NARS. Presently, Bangladesh has three Agricultural Universities (Bangladesh Agricultural University in Mymensingh, Bangabandhu Seikh Mujib Agricultural University in Gazipur and Sher-e-Bangla Agricultural University in Dhaka) and a number of other Universities have agriculture related disciplines like Fisheries and Marine Resources discipline of Khuna University and Marine Science Institute of Chittagong University. A number of new agricultural universities and a veterinary university are coming up. Cooperation of NARS with the agricultural universities will mutually benefit agricultural research and education and will contribute to human resource development for the sector.

e. Rationalize network of institutions and substations

The ARIs have a wide network of regional research stations and substations. Many of them are reportedly inadequately staffed, less than optimally equipped and their operating fund is too inadequate to run research programs. It is therefore highly desirable to rationalize the substation network. It would be beneficial to make use of the campus of one ARI substation by another ARI in need rather than establishing new substations unless it is absolutely necessary.

f. Human Resource Development

Human resource development in the NARS is said to be constrained with low salary structure, low scope to further research and training, particularly for the junior scientists and frequent changes in the top positions. Lack of operating fund to carry on research programs on sustainable basis further constrains career building and knowledge upgrading with field conditions. Also, lack of institutional linkage with overseas institutions limits research and funding opportunities. Training programs are often limited to development projects and not developed by comprehensive career planning. Developing comprehensive training plan for the ARIs and NARS taken together is a felt need. The HRD deserves special focus of orienting

g. Information, Education and Communication Campaign

Implementation of the project activities requires sharing of information with the relevant stakeholders. In the case of research components, the ARIs and other relevant organizations and individuals must be informed of the desired project interventions, the CGP and SPGR. The proposed Social Management Framework and the Environment Management Framework of the project shall also be widely circulated through BARC website (http://www.barc.gov.bd/Project.htm) along with distribution of printed summary from the PCU and PIUs, Department of Environment and the Public Information Centre of the World Bank Office in Dhaka.

5.3 Issues Relevant to Agricultural Extension System

a. Transparency and accountability of the service delivery system

Farmers in Bangladesh have limited access to extension services, for so many reasons, and this is true for all sub sectors and all categories of farmers. The poorest categories - the landless, small and marginal farmers and farm women lack access more severely than others. The commercial poultry farmers can somehow afford engaging trained staff, although not adequately qualified and large holders in aquaculture also manage to access limited extension service. But the backyard poultry rearing women and small pond operators are least served and suffer most.

The extension agencies agree that they can not adequately reach the farmers in the remote villages mainly because of staff shortage and for lack of facilities like transport and traveling allowance. These are of course important constraints. But the main problem is lack of accountability of the public extension services. Officially, the field level extension officials are accountable to the line departments through Upazila and district offices. Effectively, field level supervision is inadequate, reporting is limited to paper work and politically motivated staff unionism has further limited staff presence to occasional program days only.

Also, the system lacks transparency. Each DAE field staff (SAAO) is supposed to have a biweekly field program. But the program is not publicly available even at the UP and Upazila levels. So, farmers generally do not know who will be available where and when. It is very simple to display such information on the Upazila and UP notice boards. Further, at least one SAAO is supposed to be regularly available at the Union Parishad complex, but that too is yet to be widely practiced. DOF and DLS offices have no offices below Upazila. Regular presence of SAAO at UP level could also help farmers to access services of these departments, at least through distributing extension materials and providing information when the DOF and DLS staff will be available or where and how farmers can get specific services.

A transparent and accountable farmer led public-private-NGO partnership in extension service is needed to overcome the present problems in the field level. The GOB strategy of a one stop extension service at the UP level deserves high consideration and effective execution.

b. Social intermediation/community mobilization support

Efforts to manage and conserve flood plain fisheries could not be successfully implemented in a community where most participants belong to a minority community and yet in another where most inhabitants are very poor fishers. They needed administrative support and social intermediation for consensus building between communities. The result was, some members contributed to flood plain stocking program while many others remained passive but demanded larger share of the harvest. Some others started stealing and even robbing fish. This was learnt from two of the six villages visited as part of this social assessment. It was however confirmed through discussion with local officials that similar condition prevails in many areas and the project should therefore highly consider it. This requires cooperation between local administration, local government and community organization. NGOs can assist in the community mobilization process while the involved extension department must take the loading role to initiate and institutionalize it.

c. Participation

The NATP comprising research, extension and value chain development involves a wide range of stakeholders - the beneficiaries and non-beneficiaries from the grassroots farmer level to national level organizations, development partners, NGOs and media. But the main and ultimate target beneficiaries are "farmers" with emphasis to the poor - landless, small and marginal farmers in all sub-sectors – crops, fisheries and livestock, - both men and women farmers but with a gender focus – to include and specially target women.

To make sure that so diverse primary stakeholders are reached and particularly the weaker groups like the poorest farmers and women are not excluded requires enhancing their participation. But how to ensure or at least encourage their participation remains an important issue.

To be honest, contemporary development projects in Bangladesh, as elsewhere in the developing countries tend to use the concept in view the desires of the development partners, rather than spontaneously. At least, many of the executing bureaucrats see poor people's participation as a condition to receive donor assistance rather than a genuinely needed development strategy.

Rural Bangladesh had a long tradition of participatory development. In the past local communities built schools and managed them. Government funded only a few schools in the district towns and zamindars funded some in the relatively developed villages. But the communities did the rest all over the country. Also in the agriculture sector, farming communities dug canals, constructed dykes to manage localized water resources. Such self-help initiatives are now lost, over the last fifty years, mainly because of government providing such physical and social infrastructure support, often with donor funding, and administering such development without local participation. The result is lack of community ownership, poor quality of works and more importantly almost total absence of maintenance. Both government and development partners have learnt from this bitter experience and participation is now getting focus.

Participation in the development project can be of different levels. The lowest form of people's participation is opinion taking and then doing everything else by the executing agency. Next level is consultation to make decision, still decision making power remaining with the executing agency. The third level is joint assessment and decision making. The fourth level is collaboration and partnership between the target community and the executive agency where implementation and ownership are shared. A higher level of participation is empowering the community to own, plan, execute and taking over of operation and maintenance. It involves community capacity building while the executing agency retain supportive and facilitating role only. The highest level would be that the community is capable enough to plan, execute and maintain own projects and take assistance of the relevant GOB agencies and other service providers like NGOs on own initiative.

The Fourth Fisheries Project of the GOB, with assistance of IDA helped a process of community capacity building in four coastal shrimp farming polder communities and selected inland fisher groups. Selected local NGOs, Department of Fisheries and Bangladesh Water Development Board helped the communities

in this participatory development project. The result has been encouraging in the most difficult shrimp component where communities resolved local conflicts related to leases of canals, selection of sites for water control regulators, supervising construction and ensuring quality control. The community based organizations have been able to legally register, mobilize financial resources and give some benefits to the landless in terms of fishing access to the re-excavated canals. The project may not ensure equity since those with land will reap more benefits from improved shrimp farming, a high value export commodity. But the landless have been allowed to participate and benefit by increased fishing access to canals, larger involvement as farm labor and dyke maintenance labor and trading intermediaries of inputs and outputs. Women groups, in the case of FFP were assisted through another set of NGOs, in selected localities to acquire skills in various livelihoods while open water fishing and shrimp fry collection were adversely affected, at least temporarily, in view of restrictions on fry catching and temporary fishing ban to ensure sustainable fishing.

The NATP would also take initiative to encourage participation of various stakeholders, particularly of the poor and women in various activities that suit locally. This could include family based or smallholder dairy, poultry, aquaculture, horticulture and crop agriculture which benefit the poor and women in particular.

Enhancing participation would require involving committed and capable local NGOs who have already demonstrated competence of working with the poor farmers, fishers, fish farmers, livestock and poultry farmers and women groups. The candidate NGO may be already operating microfinance and various agricultural programs in the same district or Upazila. The partner NGO may be selected on competitive basis. The project will provide a TOR for the partner NGOs.

Although the partner NGO will mobilize community groups for each extension activity located at the village level, the extension departments at the Upazila level will have the official responsibility to mange the programs and report to the project and line agency hierarchies.

d. Elite capture

Elite capture of community based organization is a potential risk in all components but more importantly in the extension and value chain. The CIGs to be formed or reorganized may face this problem. Similar problem was found during the execution of the FFP. Local elite (not genuine fisher) tended to grab leadership of fisher groups. It was difficult to avoid them as they in many cases were in control of the water bodies. In rural Bangladesh, there are some people who always move around Upazila complex or district administration. If some projects want to support say small farmers, they become small farmers. If others want to benefit fisher groups, they identify themselves as fisher. If some project wants to organize women, they make wife or sisters in law the executives of women organization. They are everywhere around politicians and administrators. The project management therefore faces many problems.

In many cases they get allocation of khas land or khas water bodies in the name of fake landless. The FFP found instances where rich landlords, their son, relative or even fake persons were listed as landless and allocated khas land but the landlord is actually controlling it.

It is difficult to avoid such elite group because they hold local power. Reaching the genuine landless and poor requires long organizational process than just forming groups or listing beneficiaries. The process requires long consultation and working in the communities, with the communities and by the communities. The facilitating NGO must physically stay in the community and not outside of the community say in the Upazila or district town. This will help them continuously observe and find truths. Fake names will eventually go and genuine ones will be coming up, gradually, the poor, poorer and poorest ones.

There will be some initial problems, the elite and their allies and the touts will try to influence and ultimately they will give up. It also happens that some of the elite change their attitude and start helping the project when they realize that, after all the project wants to benefit the poor in their locality and for the over all development of the area. If they also realize that the project attention can not be diverted and

resources can not be grabbed, they will find it better to help development of own people rather than proving themselves anti-people. Some of them then become “champions” to help pro-poor development rather than obstructing it. The FFP, at a later stage found it comfortable to convert the elite to champions. After all, in rural society, many elite are ready to prove them as good social workers and without interest. They of course have one interest that “people honor them”, give *salam* and they appreciate it more than material benefits.

Elite capture is difficult to avoid but it is not impossible. Doing it requires awareness of the problems, the local contexts - identify the elite, the touts, their stakes and linkages - and then act proactively. Experienced NGOs, long partnership with communities, organizing the communities, helping their capacity building, ensuring wide participation of the local stakeholders including the poor in the CBOs are essential from both NGO side and the executing agencies.

e. Intra and Inter agency cooperation

The stakeholder analysis provided under section 3 indicated involvement of a variety of secondary and tertiary stakeholders, who are institutions at various levels and have a variety of competing and even conflicting interests that can affect project from the very designing stage through execution to future institutionalization. The NATP requires the following consultation and consensus building process to resolve such intra and inter agency concerns.

i. Agreeing between development partners on specific project objectives, implementation modalities, sub sector and agency wise allocation of resources and clearly defining roles of each agency
ii. Defining roles of private sector, NGOs and CBOs concerning project activities
iii. Defining roles of national, district and local administration and local government (Upazila and Union Parishad) concerning project activities
iv. Segregating activities and allocations targeted to special groups such as SM farmer, landless and women
v. Ensuring transparent planning and execution of various project activities and involving media representatives, business association, civil society and even staff union executives in stakeholder consultations at various levels, and
vi. Decentralized decision making as well as inter institutional linkages, in particular between Union Parishad and Upazila.

6. Project Design Elements for addressing the Issues of Significance

6.1 General Issues

Inclusion and inequality: One of the side effects of technology development is the wealthier groups taking advantage and marginalization of the poorer groups because they lack access to land and other resources. Bangladesh however has some favorable conditions to benefit the poor. These include reduced domination of the landed aristocracy and marginal to small and medium farmers managing most part of the farm area (82% farm area under the ownership of small, marginal and medium farmers). Although 53% households are functionally landless who own 0 to 0.2 ha cultivable land, only about 0.21% are homeless. This means that 99.79% rural households own at least a small piece of homestead land. Homestead land in rural Bangladesh is very productive. Even if the size is only about 100 sq meters, people produce considerable amounts of fruits, vegetables, bamboo, timber and fuel wood around the house. In addition, most of the rural households rear poultry, duck, goat, cattle and many operate small homestead ponds. All of these contribute to household income, nutrition and food security by direct income earning or at least by expenditure saving.

Giving larger attention to fruits and vegetables, horticulture nurseries, cattle, poultry and aquaculture will help benefiting the landless, poor and women. Conservation of fisheries resources will help fishing communities.

Intermediate technology: Encouraging intermediate technology will help minimizing displacement of agricultural labor, small and marginal farmer and will help increasing participation of female labor in various agricultural activities and reducing excessive work pressure or drudgery on women.

GO – NGO, Public – Private collaboration: The project will encourage GO – NGO, and public private collaboration in all components. In the research component, CGP will be open to all types of institutions, the ARIs, the NGOs, and the private sector. The extension component will involve local NGOs to mobilize local communities, facilitating them organizing in CIGs and federating the CIGs at the UP and Upazila levels. The NGOs, in partnership with Upazila level extension departments and local government at the UP level. In the value chain component, NGOs and private sector will be encouraged to help the CIGs and POs with training, receiving quality inputs and marketing of outputs by contract farming arrangement. The NGOs may also provide microfinance service under their normal program to the farmers and farm women provided the CIG/PO demands such service.

6.2 Research Component

The main issues related to the research component include (a) effective coordination of research under the NARS, (b) enhanced funding and utilizing the fund according to agreed priorities directed towards poverty reduction, (c) encourage and redirect research to make it need based through public private partnership, (d) enhanced partnership between agricultural research and agricultural education in the public sector agricultural universities, (e) restructuring the ARIs and rationalizing the network of ARI substations and enhancing inter-ARI cooperation in the use of each other's substation and other facilities, (f) human resource development, and (g) information, education and communication campaign.

To meet the overarching need of improving the efficiency and effectiveness of the agricultural technology system, a holistic approach has been proposed to support research and extension systems in the crop, livestock and fisheries sub-sectors having nation-wide coverage and critical role for enhancing agricultural growth. The main strategies of the project are to support: (a) Institutional reforms, (b) Establishment of sustainable funding mechanism for research, (c) Improvements in system management, and (d) Improving Governance.

6.3 Extension Component

The main issues related to the extension component include (a) transparency and accountability of the service delivery systems, (b) social intermediation and community mobilization support, (c) participation, particularly of the weaker groups, (d) elite capture of community organizations and benefits there of, (e) institutional sustainability, and (f) intra and inter agency cooperation.

For the extension component, the project proposes to fully decentralize extension services of crops, livestock and fisheries sub-sectors at the Upazila level and devolve extension program management and funding responsibilities also to the respective Upazila officers who would work in team and in cooperation with each other. With this aim, an Upazila Extension Coordination Committee (UECC) will be established to plan, execute, monitor and evaluate all types of agricultural extension activities. This will include preparation of Upazila extension plan for crops, livestock and fisheries by aggregating the Union Micro Plans. The Union Micro Pans will be prepared by village level common interest groups (CIGs) compiled at the UP level with the assistance of Union Extension Facilitation Team (UEFT).

Support to decentralized extension service will focus: (a) ensuring bottom up extension program planning through participation of producer Common Interest Groups (CIGs) and Producer Organizations (POs), and NGOs; (b) inter-agency cooperation and coordination in planning, execution and monitoring and evaluation of Upazila extension programs; (c) strengthening research-extension-farmer linkages to ensure two way flow of information; and (d) establishment of Farmers' Information and Advice Centre.

The social assessment work of the project preparation team noted a number of institutional constraints of the extension system and suggested some remedial measures to be considered during project execution. These are summarized in **Table 12.**

Table – 12: Institutional Constraints and Suggested Remedial Measures

Issues	Constraints	Remedial Measures
1. Transparency	Target group – farmers, fisher, farm women, CIGs not informed of the project activities, available services.	1. Decentralized and pluralistic extension service with one stop advice center at the UP level, open all week days 9 am to 5 pm.
2. Accountability	1. Poor interaction with CIGs, PO 2. Extension agency staff reluctant to plan and execute programs in partnership with CIG, PO, LGB and NGOs. They consider themselves owners of everything.	2. Staff orientation, training by project and line departments. 3. Direction from respective line departments.
3. Inter-agency cooperation	Conflict, rivalry, planning and execution delays	1. Prior consultation and consensus building. 2. Targets, tasks and resources segregated by sub sector.
4. Institutional networking	1. Weak research – extension - farmer linkage. 2. Weak linkage with other service providers- NGOs and private sector	Line agencies initiates and carry on dialogue with other GOB agencies, international organizations, NGOs and private sector.
5. Staff unionism	1. Line of command weakened 2. Staff absence remain high	1. Strong political commitment 2. Strong direction from line ministries
6. Inadequate and unstable funding	1. Dependence on donor funding 2. Inadequate operating fund	1. GOB funding through revenue budget 2. Advance operating fund 3. Funding through Upazila block grant.

7. Social Management Framework

7.1 Introducing Social Management Framework

The NATP is aimed at reducing poverty through improved agricultural productivity and farm income with special emphasis to the small and marginal farmers. To achieve this aim, the NATP envisages to support reforms and capacity building of the public sector research and extension organizations and provide supplemental operational expenses. It also envisages to work through farmers' common interest groups (CIG) and their federations (PO) facilitated by the DAE, DLS and DOF in partnership with local government and NGOs.

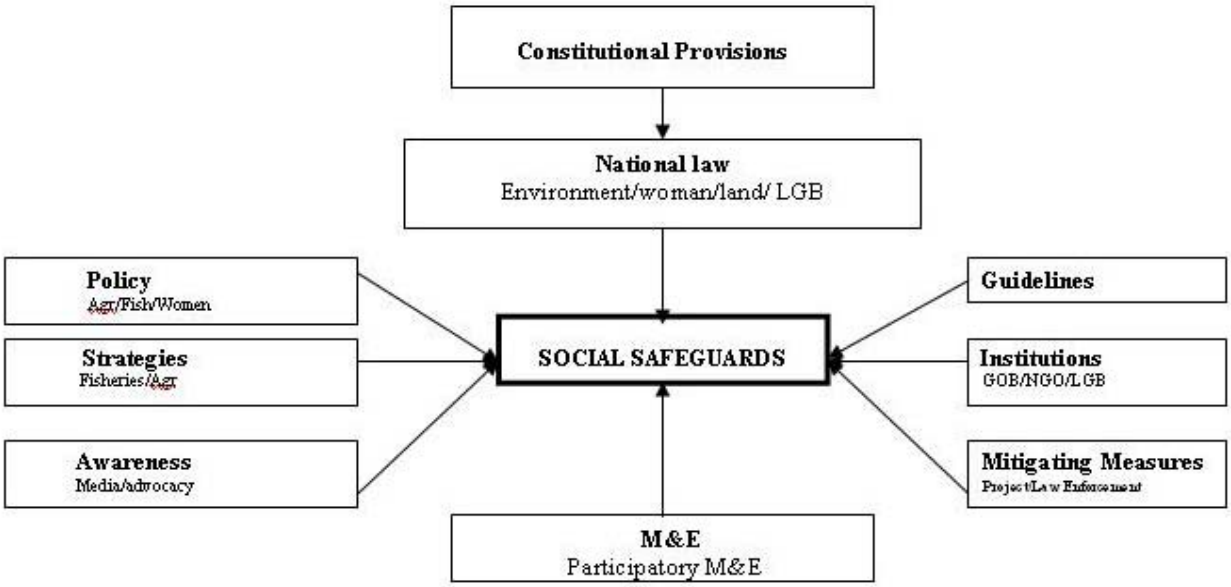
The project design is such that the research priorities will be determined at the NARS through effective consultations with the relevant stakeholders to ensure that the researches are "need based". Still, there remains some concern as the likely outcome of the research interventions can not always be clearly predicted before the research is actually undertaken.

The extension activities also will be very participatory in nature, to be planned at the village level and consolidated at the Upazila level where the common interest groups of farmers and local government will be actively involved. Therefore it can be expected that the projects' extension activities are pro-poor and they adequately take in to account of the interests of the weaker groups like the landless, poor and women. However, there remains some concern like elite capture.

Although the project is not expected to have any adverse social impacts, it was considered important that the NATP makes some special arrangements to avoid unpredictable adverse consequences or uncertain outcomes that could affect the poor and other marginal groups. To overcome such possibilities, a simple Social Management Framework has been proposed in this chapter to be applied to the research component followed by mitigating measures to be applied mainly to the extension and value chain components.

A comprehensive view of the social safeguard management elements is provided in **Figure 1.** It comprises legislative as well as non legislative institutional elements. The legislative elements include constitutional provisions and relevant national laws, policies and guidelines. The non legislative elements include awareness, mitigating measures, M&E and the relevant institutions.

Figure – 1: Social Safeguard Management Elements



7.2 Legislative Framework

a. Constitutional provisions:

The constitution of the people's republic of Bangladesh pledges

> A society, " free from exploitation in which the rule of law, fundamental human rights, freedom, equality and justice - political, economic and social, will be secured for all citizens". – The preamble page.
>
> "The state shall encourage local Government institutions composed of representatives of the areas concerned in such institutions special representation shall be given, as far as possible, to peasants, workers and women". – Article 9
>
> "Ensure participation of women in all spheres of national life." – Article 10.
>
> Ensure "effective participation by the people through their elected representatives in administration at all levels" – Article 11.
>
> "Emancipate the toiling masses – the peasants and workers – and backward sections of the people from all forms of exploitation". – Article 14.
>
> Ensure "basic necessities of life – food, clothing, shelter, education and healthcare; and agriculture and rural development and compulsory and free education for children". – Articles 15 to 17.
>
> Ensure "equality before law" - Article 27.
>
> Ensure "freedom of association as fundamental rights" - Article 38.

All of the above constitutional provisions are important since they pledge not only equality, but also special safeguards for the weaker section of the society.

b. The relevant social safeguard policies, Acts, Rules and Strategies:

The Government of Bangladesh has several important policies pertaining to development of agriculture – crops agriculture, fisheries and livestock and the policies incorporate social safeguards in relation to the development of agriculture, besides economic growth strategies. Such policies include:

1. National Agriculture Policy, 1999
2. New Agricultural Extension Policy, 1996
3. Implementation Strategy of National Agriculture Extension Policy, 1997
4. Actionable Policy Brief and Resource Implications, 2004
5. National Fisheries Policy, 1998
6. National Fisheries Strategy, 2006 (yet be approved along with 8 sub strategies)
7. National Environment Policy, 1992
8. Environment Conservation Act, 1995
9. Environment Conservation Rules, 1997
10. National Women Development Policy, 1997 revised in 2004
11. Prevention of Women and Children Repression Act, 2000, revised in 2003
12. National Water Policy, 1999
13. Guidelines on Participatory Water Management, 2000
14. National Land Use Policy, 2001
15. National Rural Development Policy, 2001
16. National Forestry Policy, 1994
17. National Food and Nutrition Policy, 1997
18. Comprehensive Food Security Policy (Draft), 2000

The above GOB policies in general emphasize equity and give special attention to the disadvantaged groups. Some of the most relevant policies emphasize the following:

The National Agriculture Policy, 1999: highlights as one of its 18 main objectives as under:

> To protect interests of the small, marginal and tenant farmers
>
> Woman was not specially mentioned in the objective part but a section was included at the end recognizing women's role in particular to agricultural activities like post-harvest work and kitchen gardening and pledged training them in such areas and providing credit and extension support.
>
> Under research section of the NAP, one of the 20 priority areas emphasized "enhanced participation of women in agricultural activities and removal of constraints".

The National Fisheries Policy 1998: specifies its second objective as:

> Poverty alleviation--and improving socio economic condition of the fishers
>
> Women not specially mentioned in the objective part but in the aquaculture part it did mention that women in fish culture will be trained – did not mention it as a priority.

The main thrust of the Food Policy, 1988 are:

> Price stability
> Vulnerable Group Development – targeted to the poor and distressed women
> Vulnerable Group Feeding - targeted to the poor and distressed women

The National Food and Nutrition policy, 1997: widens the scope of food policy and pledges

> Food security down to household level
> Goes beyond cereals, emphasizes homestead agriculture, fruits, vegetables, fish, meat
> Emphasizes organic agriculture and social equity

National Women Development Policy, 1997 revised in 2004: is very comprehensive. It comprises 20 objectives and 14 areas of actions. Each area of actions contains sub areas and several identified actions in each. Mentioning all is unnecessary. A few of the important objectives include:

- Equality between men and women
- Security of women from family to state level
- Economic, social and political empowerment of women
- Human rights
- Poverty alleviation of women
- Prevent oppression against women and girls
- Equal access to education, sports, culture etc.
- Special assistance to distressed women like poor widows, divorced, separated, abandoned, single women
- Institutional development

The most relevant women policy to the NATP is:

Innovate and use of technology that is women-friendly and reject of technologies if not women-friendly

c . The policies versus policy implementation

Bangladesh has Too many policies and too little implementation
Also too many laws and too little law enforcement

Let us take the example of dowry in wedding – Dowry is illegal but almost universally practiced. To some, it is a gift. To others it is a condition to marriage. Yet, to many others, it is a necessary condition to continue "peaceful" married life even after the birth of children. No amount of legal action will ever be able to stop it.

d. Awareness

Laws are necessary but not sufficient to achieve desired objectives. The sufficient condition is social awareness and self motivation. No law or policy compel a landowner to plant trees surrounding homestead land and fish ponds, although government encourages tree plantation by other means – publicity, awareness building. The result is revolutionary success. Humans are guided by own benefits, high price of timber and fruits and not just global interest, pure oxygen. Here, global interest and personal interest converged. But in the case of public forest, personal interests of thief and corrupt forestry employee converged to defeat national interest and global interest. The toughest law to imprison any intruder has failed to protect the so called reserved public forests.

Another good example is health and family planning. CPR exceeded 60% and EPI cover is above 90%. Awareness building and improved access to services with efforts from both GOB and NGOs made it possible.

The last example is sanitation. Many Upazilas and Unions achieved 100% sanitation and national sanitation cover improved to 70% from only about 26% in the early 1990s. The participation of local government, Union Parishad deserves highest appreciation in it along with local administration and NGOs. Here again, awareness campaign, rather than ring-slabs was the driving force.

7.3 The NATP Social Management Framework – to be applied to Research Component

NATP agricultural research is a reasonably safe area of investment from the social point of view, because the project will support need based and mainly adaptive research within a broader framework of helping poverty reduction, equity and sustainability. Research in the NARS in general and the NATP in particular can not overlook the interests and priorities of the poor and disadvantaged groups since priorities are set before specific research activities are carried out. The NATP will assist to strengthen the role of NARS, hence researches are likely to be more need based and poverty focused than before.

The Actionable Policy Brief and Resource Implications, a document prepared under the Agricultural Sector Review of the MOA identified six short and medium term priorities. The short tem priorities concern directing research attention to land and water-saving technologies, bio-diversity conservation, product development and quality improvements. The research section of the National Agriculture Policy identified 20 priority areas for the ARIs and one of these concerns involve enhancing women's participation in agricultural activities.

The NATP social safeguard management framework would comprise a set of exclusion criteria and a screening process to ensure directing research to priority areas in all probable sub projects. The exclusion criteria and the screening process are provided in sections 8.3.1 and 8.3.2 respectively.

7.3.1 Exclusion criteria

Considering adaptability, equity, sustainability and gender focus of the agricultural research interventions under the NATP, the project will adapt and follow a set of exclusion criteria to make sure that research proposals **under CGP** having risks of developing socially or environmentally harmful technologies are right way rejected. An indicative list of exclusion criteria is provided below:

- **GMO, biotechnology:** The medium term priorities in the Actionable Policy Brief of the MOA highlighted the need for formulating a comprehensive biotechnology policy and regulatory framework and capacity building for GMO testing. Without having such comprehensive policy and institutional capacity to researches in such areas could be risky and the Actionable Policy Brief cautioned of its social sensitivity. The NATP therefore will not support such research proposals under CGP.
- **Nuclear agriculture:** Nuclear agriculture could be another risky area and the NATP will not accept research proposals in this area under CGP.
- **Physical obstruction and closing water flows:** The NATP will not accept any research proposals under CGP that may cause physical obstruction to water flows and thus adversely affecting aquatic biodiversity in *haor* areas, rivers, canals and *beels* and thus negatively impacting livelihoods of fishers. In contrast, interventions helping conservation of open water fisheries resources such as community managed sanctuaries and livelihoods support to traditional fishers will be appreciated.
- **Grabbing common property area:** NATP will not support interventions that will contribute to diverting common property, such as grazing areas to intensive agriculture and flowing water bodies, khas jolmohal (public fisheries) and flood plains to intensive closed aquaculture.
- **Deforestation:** The NATP will not support any interventions that will contribute to deforestation or reducing biodiversity in the public forest areas.
- **Indigenous people:** NATP will not support any sub-project which is likely to affect livelihoods and cultural identity of indigenous people.
- **Requiring land acquisition leading to involuntary resettlement:** NATP is unlikely to involve land acquisition and thus involve involuntary resettlement. Any subproject proposal requiring land acquisition will generally be excluded. Particularly those requiring land acquisition without affected people's informed consent or power of choice as outlined in the World Bank's Operational Policy (OP 4.12). The OP 4.12 covers involuntary acquisition of land involving (a) relocation or loss of shelter, loss of assets or access to assets, and loss of income sources or means of livelihoods. The OP 4.12 requires compensating the affected people at full replacement cost and as per resettlement plan or resettlement policy framework that must be prepared by the project. NATP wants to avoid such complexities and therefore land acquisition must be avoided in the sub projects.

7.3.2 Screening process

While the exclusion criteria will help accepting particular sub project for consideration or outright rejection, the screening process will evaluate merits of the proposals based on a set of subjective criteria. By each criterion a proposal will be assigned positive and negative scores in the assessment of the evaluator. Over all score (sum of positive minus sum of negative) will help the management to rank a sub project high or low. Scores below 10, 10 to 14 and 15+ could be considered low, moderate and high.

The criteria provided in the screening matrix (**Table 13**) are however very indicative and the evaluators and management shall have freedom to modify the list if felt essential.

Table 13: Indicative Screening Matrix in Social Safeguard Management

Criteria	Key Question	Positive Score (1-3)	Negative Score (-1-3)	Reasons for specific scores assigned
1. Participation	To what extent ultimate beneficiary of the sub project will enable the poor, landless and women to participate and benefit.			
2. Inclusiveness and Equity	To what extent the proposed intervention or its outcome will contribute to equitable distribution of benefits generated by it			
3. Affordability	To what extent small, marginal farmers, women will be able to afford the benefits of the proposed technology or it will require investment beyond their financial capacity			
4. Ecological reserves and livelihoods of the poor	To what extent ecological reserves like forestry, open water fisheries conservation (beel/ haor/ baor/ river/ canal/ flood plains) and thus livelihoods of the poor like fishers will be impacted.			
5. Soundness of technology	To what extent the proposed technology development match national priorities set in NAP, NARS etc.			
6. Displacement of marginal groups from land/ land use	To what extent the sub project will help or constrain ownership/tenancy/ customary rights of landless, small, marginal farmers, fishers, women etc. such as on grazing, fishing, share-cropping, smallholder farming.			
7. Adaptability	Likelihood of successful research -extension – farmer linkage and feedback			
TOTAL SCORE				

The above checklist of issues is indicative only. The relevant institutes will be able to adjust it to their needs.

7.4 Mitigating Measures - Extension Component

Safeguard management framework will be applied in the research component since the outcomes are not immediately visible and could be uncertain. The outcomes of the extension component on the other hand are tangible and immediate. Also, the effects and impact are direct and the affected and benefited people can be easily identified and targeted. Therefore a more specific safeguard management plan will be applied in the case of extension component.

7.4.1 Probable Effects and Mitigating Measures

The social safeguard management framework will also involve identifying probable effects and necessary measures in order to aware and guide the executing agencies to take precautionary measures and corrective actions, should some interventions need them. **Table 14** below provides an indicative list of issues and problems that might arise during implementation of the extension and value chain components.

Table – 14: Probable Effects and Mitigating Measures

Problems and Issues	Effects	Mitigating Measures
Delivery failure: not properly reaching target group		
1. Elite capture of CIG. PO	Weaker groups not adequately represented in the CIGs and POs and are deprived of project benefits.	1. Continuous field based community consultation though NGOs but in partnership with local government and extension agencies. 2. Build up responsible and representative CBOs and help their capacity building, networking and institutionalization. 3. Targeting: Homogeneous CIGs at the grassroots and targets segregated. 4. Participatory planning at the CIG level.
2. Sustainability of CBOs	CIGs, PO, CBOs institutionally weak, unsustainable and become non-functional after project period.	
3. Priority setting	Priority areas of the poor and women such as homestead agriculture, backyard poultry, promoting seed preservation methods and open water fisheries management may not be prioritized while commercial aquaculture and field crops may get priority on the ground of economy of scale and stronger voice of the non-poor.	
4. Participation and ownership	Weaker groups' right to participate may be either denied or they allowed only token participation and that too reluctantly in view of "condition imposed by donors".	
Structural failure		
5. Labor displacement	Will require better skilled manpower and may reduce employment opportunities of unskilled labor-power tiller in place of bullock plough.	Farmer training in new crops, better farming practices, operation and maintenance of simple equipment etc in partnership with CIG.
6. Tenant displacement	Land owners will manage land rather than sharecropping because of increased profitability. Rent will increase and poor farmers will, at least initially unable to pay higher rent.	NGOs may help tenant farmers through microfinance support if necessary. The selected partner NGOs should have ongoing MFI program in the area. Displaced sharecroppers be trained and provided MFI support.
7. Marginalization of small and marginal farmers and women	New crops, improved farming practices will require increasing investment and the small/marginal farmer may lack financial capital, equipment and skills.	1. Skill training 2. MFI, credit linkage 3. Market linkage 4. Contract farming support

7.4.2 Targeting Special Groups: Women

The development services reach inadequately to the farming communities in general and to the weaker segments of the rural communities in particular, such as women and landless. Often stated problems are inadequacy of staff and lack of transport facilities. But the real problem is lack of accountability of the system in public sector services delivery institutions. Of course, lack of operating expenses is a constraint. The extension services remain largely inactive in the absence of development projects, because required recurrent funding such as for training, demonstration etc. can not be easily obtained without project. For the same reasons, landless and women are inadequately served in the absence of projects. They are served under projects like SAIP because, targets are set in the project and compliance is monitored on a regular basis during the project period.

Working with women group is better through female staff at the local level particularly in more conservative areas like Chittagong, Noakhali and Sylhet districts. Conservativeness is decreasing but its elimination will take time. Until then female NGO staff could be utilized to specially reach women groups. Female SAAO may not be practicable at this stage because new recruitment in large number is unlikely but existing female SAAW can be placed in the project area as far as practicable.

Women have special activities and potentials in agriculture, such as backyard poultry, poultry farm, dairy, cattle fattening, duck rearing, homestead pond, home based horticulture, seed preservation, post-harvest care, processing and storage. Training and extension service to women deserve careful designing considering special needs.

The disadvantaged social groups require special targeting under various development programs since they are often missed by the normal programs, particularly of the Government Departments mainly because of limited institutional capacity. Agricultural technology traditionally attracts wealthier farmers and at most enterprising medium farmers. It is unlikely to attract the landless and poor even in areas with reasonably developed physical infrastructure, like road network.

Chapter 2 gave an overview of the status of women in Bangladesh and their role in the agriculture sector. It was noted that women's role in rice and other crop production, particularly in post-harvest and seed preservation remains sizeable and their involvement in fisheries and livestock is expanding. In the past women's involvement in these sub sectors was limited to very subsistence level and home-based activities like backyard poultry. Now it has expanded to commercial poultry and aquaculture, beyond homestead ponds.

Within agriculture, women are pivotal in respect of kitchen gardening and other homestead production, and thus contributing a lot to household food security. Their roles and functioning provide an opportunity to seek greater off-farm production options.

Given these, the project recognizes that the women participation is crucial to the success of the project. Besides understanding their roles, needs and perception;, women-centric constraints that limit their participation in the project designing, implementation and management too should be appreciated. Further, it is well perceived that addressing gender issues will result in benefits that go beyond the spheres of the project, into household livelihood improvements in particular and household food and nutritional security, in general.

In view of above, the project's Gender Inclusive Strategy will aim at recognizing women from the farming households' point of view and as farmers/ farm managers, in their own right. Accordingly, the following interventions will be planned:

- Capacity Building: (i) This will include training the researchers to identify and respond to women's technology requirement; (ii) gender sensitive training for all project functionaries at the national, district and Upazila levels, including contractual partners; (iii) equipping the NGOs in conducting gender analysis and identifying opportunities for interventions; and (iv) developing a cadre of women agriculture workers (like LEAF of DOF) from among the local farming communities/ self-help groups/ NGOs.
- Women Mobilization: Special efforts at establishing exclusive women groups and provide opportunity for participation in demonstrations, shouldering responsibility for input supplies, quality control and output marketing.
- Technology Support: particularly to the women groups in agriculture technology adoption (both pre- as well as post-harvest) and providing marketing support and facilitating linkages with other agencies/ institutions.
- Governance: Women membership/ representation in local bodies/ CBOs shouldering responsibility for designing, approval as well as implementation of research proposals as well as village/ Union/ Upazila Action Plans.

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Comments of Stakeholders on the Environmental Management Framework and Social Management Framework (EMF and SMF)

General Introduction:

The Environmental Management Framework (EMF) and Social Management Framework (SMF) of the NATP have been widely circulated for pubic information through the BARC website. Public announcement were published twice in two major national dailies, the Daily Star and the Daily Ettefaq (dt Ettefaq 26 April and 18 May and Daily Star 24 April). Hard copies of the EMF and SMF were made available at various GOB agencies including the BARC, DAE, DLS, DOF and Department of Environment. In response only three local NGOs sent comments, one through email and the other two by mail.

It is however not unexpected that only few comments are received. The reasons could be, the subjects are new to most readers. Interestingly, the three NGOs offering comments are less known and small NGOs, two of them not having land phone and email address.

Surprisingly, the large NGOs, including the environmental and social activists did not offer any comments. It seems that they are "too busy to offer comments" unless "paid for". The smaller ones offered comments probably because they took this opportunity to introduce themselves to a forthcoming project.

Contents of the comments:

NGO 1. ChangeMaker: A Society for Social and Economic Development
appreciated the EMF and SMF and underlined the need for addressing several issues under the NATP including the following:

a. Input price, quality and availability at the farmer level
b. Supporting efficient use of energy, mainly diesel and looking for alternatives like CNG and LGP to be used in irrigation pump, power tiller etc.
c. In view of the new threats emerging from climate change the ChangeMaker informed of their present involvement in "Hydroponics" which emphasizes changing cropping patter and crop calendar (less water consuming crops, reemphasizing monsoon crops etc.), floating seedbeds and conserve and retain monsoon water.

NGO 2. Griha Sukhan Foundation (reg S-4114 (216)/04) mobile 01711206190, 01911908192

Emphasized the use of
a. Balanced fertilizer – green manure rather than chemical fertilizer,
b. Popularizing Guti Urea
c. Organic farming
d. Integrated Pest Management and
e. Managing soil health, soil fertility

The GSF Emphasized the need for cooperation of GOB agencies with NGOs, farmers, agricultural scientists, environmentalists, teachers, mosque imam and community-leaders to bring a revolution in agriculture.

NGO-3. Organization of Environmental Pollution Prevention Program (OEPPP) unregistered

The OEPP is an unregistered NGO operating at the district town Kishoreganj, 150 kms northeast of Dhaka (cell phone 01715 412 999, 01716 747 298, 0158 756820).

Actually the OEPP appreciated NATP for incorporating EMF and SMF and highlighted some of the features of SMF and EMF circulated by the project. At the end they have expressed willingness to participate in the NATP as a “partner NGO”.

The above comments are self explanatory. They however do not add any substantial point. Rather they reinforce and reemphasize the NATP approach to use SMF and EMP as an integral part of the project during implementation.

As a record of public disclosure and offering comments by some of the NGOs, this is appended to both EMF and SMF reports.